Quantum Physics &
Human Resource Management
- An HRM recruitment tool based on universal principles

Kvantefysik &
Human Resource Management
- Et HRM-rekrutteringsværktøj, baseret på universelle principper

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Abstract

The research question of this thesis is whether it is possible to make an HRM recruitment tool based on an energetic profile of the candidate that would help to predict that person's skills and competences.

The first step was to examine whether or not there is any need for a company to have competent employees, and thus a reason to develop a recruitment tool. The HRM literature strongly suggests this.

The second step was to evaluate if the present academic research within the recruitment process gives a 100% security of on-boarding the best employees, as if so, there would be no need for a further recruitment tool. There is academic research, which suggests that the present recruitment methods do not guarantee the on-boarding of the best employees and that there is a large financial gain to be obtained by improving the prediction accuracy within the recruitment process.

The third step was to analyse the structure of the universe in which we exist, to see if there are principles which can be applied also to assess human beings, assuming that such an analysis would go to a deeper level of the human being, and thus be able to make predictions previously not included in the recruitment process.

It has been concluded that there is academic research, which supports this connection.

The fourth step was the analysis of previous academic work with the human energetic structure while evaluating if there is a potential for applying that research within the HRM domain to predict human skills and competences. It has been found that there is academic research suggesting so.

The fifth and final step was to analyse if there exists a previously applied evaluation tool for integrating the human energetic structure with performance measurements. The purpose of this analysis is to make predictions about the correspondence between a certain energetic profile and various professional domains.

It has been concluded that such a tool exists, and thus that there is a potential for developing and applying the human energetic profile within the recruitment domain.

The conclusion of this thesis is that there is a theoretical foundation for developing a recruitment tool based on the energetic profile of the human being, however, further academic research is needed in order to give this tool a practical application.
Parts of this thesis have been used for the article:

"Quantum Physics
& Human Resource Management
- The Energetic Structure of the Human Being"

A copy will be available through www.RePEc.org (Research Papers in Economics)

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**Practical Information**

This Master’s thesis is written in UK English, and in the Continental academic tradition, however with the Harvard Referencing Style.
# Table of Contents

- **Abstract** ......................................................................................................................... 2
- **Acknowledgment** ............................................................................................................. 3
- **Practical Information** ....................................................................................................... 3
- **Table of Contents** ........................................................................................................... 4
- **Introduction** ..................................................................................................................... 5
- **Problem statement** ........................................................................................................... 7
- **Delimitation** ..................................................................................................................... 7
- **Sources** ............................................................................................................................. 9
- **Outline** ................................................................................................................................ 12
  - **Methodology** .................................................................................................................. 14
    - **Pragmatism** ................................................................................................................ 14
    - **Discussing the implications of selecting pragmatism as methodology** ..................... 16
    - **Part-conclusion** ......................................................................................................... 17
  - **Intermezzo** .................................................................................................................... 17
  - **Part 1: Strategic Human Resource Management** ............................................................ 18
    - **A Brief History of Human Resource Management** ................................................... 18
    - **The Strategic part of Human Resource Management** ................................................. 19
    - **Sustained advantage** ................................................................................................. 21
    - **The process of strategic management** ...................................................................... 22
    - **Part-conclusion** ......................................................................................................... 22
  - **The resource-based view** ............................................................................................. 23
    - **What is a resource?** .................................................................................................. 23
    - **Human capital advantage** ....................................................................................... 24
    - **Part-conclusion** ......................................................................................................... 25

- **Part 2: Recruitment & Selection** ..................................................................................... 26
  - **Recruitment** .................................................................................................................. 26
    - **Probation** ................................................................................................................ 32
    - **Signalling** ................................................................................................................ 33
  - **Recruitment mistakes** .................................................................................................. 35
  - **Part-conclusion** ............................................................................................................ 35
  - **The cost of hiring the wrong person for the job** ............................................................ 36
  - **Performance predictors** ............................................................................................... 37
  - **Part-conclusion** ............................................................................................................ 41
  - **Neuroscience** .............................................................................................................. 41
  - **Part-conclusion** ............................................................................................................ 44

- **Part 3: Quantum Physics and the Principles of the Universe** .......................................... 45
  - **The universe and its principles** .................................................................................... 45
    - **Electromagnetism** .................................................................................................... 46
    - **Criticism of Quantum Physics** ................................................................................ 48
    - **Discussion** .............................................................................................................. 49
  - **Electromagnetism and Chemistry** .............................................................................. 49
  - **The Human Energy Field** ......................................................................................... 51
Dr. Hiroshi Motoyama ........................................................................................................51
The meridians ....................................................................................................................52
Discussion of Motoyama’s findings regarding meridians ..................................................54
Part-conclusion ................................................................................................................54
The chakras ......................................................................................................................54
Discussion of Motoyama’s findings regarding chakras .......................................................61
Part-conclusion ................................................................................................................62
Professor Emeritus, Dr. Valerie V. Hunt, UCLA .................................................................63
The electromagnetic energy field ......................................................................................63
Discussion of Hunt’s findings .........................................................................................65
Part-conclusion ................................................................................................................67

Part 4: Employee evaluation ..........................................................................................68
The 360 degree feedback ...................................................................................................68
Criticism of the 360 degree feedback ................................................................................72
Part-conclusion ................................................................................................................73

Summary of the thesis .......................................................................................................74

Part 5: Conclusion & Perspectivation ............................................................................75
Conclusion .......................................................................................................................75
Deliberation on differences to other similar surveys ........................................................77
Perspectivation ................................................................................................................77

Part 6: References ...........................................................................................................79

Part 7: Bibliography .........................................................................................................80
Attachments .......................................................................................................................82
Attachment 1: Neuroscience assignment .....................................................................82

Introduction

The purpose of this thesis is to investigate the energetic profile of a human being as a tool for making predictions about that being in recruitment and selection situations, which can help predict who will be the best candidate for a specific position.

I wish to analyse, from a scientific point of view, whether or not it is possible to make an energetic profile of a human being based on one of the universal principles revealed by Quantum Physics (Electromagnetism) and if the case may be, whether such a profile would have predictive powers regarding that person’s skills and competences within the domain of Human Resource Management, for example within Recruitment & Selection.

I am fully aware, that the approach of this thesis, combining Quantum Physics and Human Resource Management, is a new way of thinking within the HRM domain and I shall hereby give a
brief – resume of the line of reasoning, which has brought me to consider the possibilities I wish to examine in this thesis.

Einstein stated that everything in the universe consists of energy \((E=MC^2)\); considering that this is true, then a human being, who is part of this universe, must also consist of energy. According to Quantum Physics, energy abides by certain universal principles, for example the strong nuclear attraction, electromagnetism, etc. and I consider it a fair statement that by knowing and applying these principles we - humanity as a whole - have made enormous progress, within the last 100 years or so, at least at the physical level.

Human electromagnetic field measurements have recently begun to be applied in order to diagnose health issues. Within the domain of medicine and biology this is known as "Electromagnetic or bio-electromagnetic signatures acquisition and processing" (Costin, 2014)

The work to produce an electromagnetic “signature” of a person in order to diagnose and cure diseases builds on the academic studies of, amongst others, Professor Emeritus, Dr. Valerie V. Hunt (1996) and Dr. Motoyama (1978), who have also studied these electromagnetic fields in connection with human skills and competences.

Thus there seems to be a scientific basis to assume a relationship between the electromagnetic field of a person and that person’s skills and competences; therefore I wish to examine whether or not this can be used for reliable predictions within recruitment and selection.

The reason why I focus upon the domain of recruitment and selection is, amongst others, that I am an educated IBM Recruitment Specialist, and after having partaken in enough recruitment and selection processes, I have begun to reflect upon whether or not this process leads to the on-boarding of the best candidates, or if there could be a financial gain for a company to resort to another recruitment and selection tool, which might be able to make predictions not included in the previous selection of performance prediction tools.

It is my work related experience as a recruitment specialist that an attitude of "An employee = an employee = an employee" often prevails in companies.
In other words, any individual with a degree in engineering for example is considered equal to any other individual with the same degree and the same grades; therefore the company does not consider all the other possible differences between such two employees, for example how they will fit into the culture of the company, or with the people in their department etc.

In this way many aspects, which potentially could be important and create value for the company, are ignored in the recruitment process. Thus, a performance prediction tool, which describes the structure of a candidate as deep as possible, seems worth examining for practical applicability.

This narrative leads me to the following problem statement.

**Problem statement**

Is it possible to make an HRM performance prediction tool based on the universal principles revealed by Quantum Physics, which can be used within the HRM recruitment and selection process?

Including:

1. Is there any HRM need for such a tool?
2. Is there any need for improving the recruitment and selection process?
3. Are there any financial benefits to be obtained through such a tool?
4. Might such a tool provide us with predictive powers, which cannot be obtained in other ways, for example through neuroscience?
5. How can such a tool possibly be applied within HRM to give predictions about future performance?

**Delimitation**

This assignment will be purely theoretical.

The topic chosen will be treated as a conceptual research problem, however the issue of practical application will be included, yet only in a theoretical way.
I shall not go into a detailed discussion of the mathematics of quantum physics, or into a detailed discussion of neuroscience, except in order to clarify that the human being is more than his brain processes and thus he¹ cannot exhaustively be described through his cognitive processes.

Hunter & Hunter state that cognitive ability (intelligence) is the best performance predictor. I shall not go into a discussion regarding the definition of intelligence, how many kinds of intelligence there are, etc. I have already treated this subject in a paper at Copenhagen Business School, and it is vast enough to deserve an entire Master’s thesis on its own.

This thesis is not intended to deal with the domain of molecular biology. It is not because of any aversion against molecular biology, or out of the belief that molecular biology – in theory - cannot make – certain – valid predictions about human beings, but because molecular biology deals with the chemical level and this thesis is focused on examining the layer beyond it, namely the electromagnetic field.

There are many other recruitment and selection tools, for example MBTI, Shapes, Scales, etc. It might someday be concluded that one, or several of them, offers better performance prediction than the one I intend to develop based on the universal principles revealed by Quantum Physics. In order to reach that conclusion, first one needs to develop the recruitment and selection tool I suggest in this thesis, and then to compare it with the other available tools. Therefore I shall not include these other tools in my thesis, as it is too early to make such a comparison.

Although I refer to “skills and competences” throughout the entire thesis I do not wish to enter into a philosophical discussion about what that actually is, as that is also a subject deserving an entire Master’s thesis on its own, and has been part of the HRM course material. My working

¹ In order to avoid being accused of sexism I choose to follow the example of Sir Penrose who states that:

There is an inevitable problem in writing a work such as this in deciding whether to use the pronoun 'he' or 'she' where, of course, no implication with respect to gender is intended. Accordingly, when referring to some abstract person, I shall henceforth use 'he' simply to mean the phrase 'she or he', which is what I take to be the normal practice. However, I hope that I may be forgiven one clear piece of 'sexism' in expressing a preference for a female interrogator here. My guess would be that she might be more sensitive than her male counterpart in recognizing true human quality! (Penrose, 1989: 8)
A definition of this concept is inspired by what Pia Bramming stated in a lecture at CBS, 'A competent person is a person who *can, knows, does!*'²

**Sources**

According to the evaluation criteria set by the Copenhagen Business School regarding the Master’s thesis, the student needs to 'Select and process primary and secondary sources used to document analysis and problem solution.'³

In this part I shall introduce the main academics on whose work this thesis is based and next I will discuss why I included them, further providing reasons why I did not include others.

I shall present the academics used in each part of the thesis separately in order to provide a better overview.

**Part 1: Strategic Human Resource Management**

This part is primarily based on Professor of Human Resource Management, University of Auckland, Peter Boxall & Associate Fellow of the Industrial Relations Research Unit at Warwick University Business School, John Purcell's book “Strategy and Human Resource Management”, which is a general description of the HRM field.

This book has been chosen since it combines various theories within the HRM field, thus providing an applicable approach to what I have found necessary to include from this domain, in order to analyse the problem statement of my thesis.

A series of relevant articles and books have been used to elaborate and criticize Boxall & Purcell's view, whenever I found a need for this. Amongst the authors are: Lengnick-Hall et al., Nohria et al., Schumpeter, etc.

² Personal notes from the HRM course at CBS.
Part 2: Recruitment & Selection
This part is based on the work of Professor of Human Resources Management and Economics at Stanford University, Edward P. Lazear & Professor of Economics and Human Resources at the University of Chicago, Michael Gibbs, presented in their book “Personnel Economics in Practice”. This book has been chosen because of its detailed academic description of the recruitment and selection process.

As an IBM Recruitment Specialist I have spend a lot of time studying different approaches to recruitment and selection, yet I have found none which gives such an exhaustive view as Lazear & Gibbs’s book.

In the process of arriving to this book, I have read other works dealing with the same subject, for example “The Handbook of Strategic Recruitment and Selection”, not to mention all the literature provided to me by IBM, yet the final choice fell upon “Personnel Economics in Practice”.

The neuroeconomic part is based on the book “Neuroeconomics” by Dr. Paul W. Glimcher from the Center for Neuroeconomics at the New York University, et al, as it provides a wide and detailed understanding of the domain of neuroscience. The critique of the neuroeconomics perspective is provided by Professor of mathematics at Oxford University, Sir Roger Penrose, who in his book “The Emperor’s New Mind” delivers a 600 page mathematical argumentation of why the human being is more than just its brain processes.

Again I have criticized and elaborated on the applied material, where it was found needed, resorting to a series of articles and books, for example: Pedersen, Nohria et al., Deutsch, O’Meara et al., and Hunter & Hunter.

Pedersen helped me argue on the logical inconsistence in Lazear & Gibbs’s statements.

The work of Hunter & Hunter is used to criticize Lazear & Gibbs’s approach to performance predicting credentials, thus providing a more nuanced perspective with better prediction indicators.

Part 3: Quantum Physics and the Principles of the Universe
This part is based on the work of several academics whose various areas of expertise will be included.

Probably the most famous is the former Lucasian Professor of Mathematics at the University of Cambridge, Stephen Hawking, who is to be the main source for arguments pertaining to Quantum
Physics. I chose him partly because it is my impression that he is considered one of the persons - if not the person - with the best understanding of the laws of the universe we live in and partly because he presents this information in a manner accessible to readers without advanced mathematical skills.

I studied the work of DTU Lecturer, Morten Severinsen for my ideas related to electromagnetism. Professor Emeritus from Stanford University, Dr. William A. Tiller provided the academic work suggesting a connection between the electromagnetic field and human skills and competences.

The part regarding the energetic field of the human being is based on the work of two of the most known scientists within this domain: Professor Emeritus, Dr. Valerie V. Hunt, from the University of California, Los Angeles, and Dr. Hiroshi Motoyama, from the California Institute for Human Science, who has been selected by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as one of the world’s ten foremost parapsychologists. These two scientists have, independently of each other, provided most of the groundwork necessary to establish the domain of examining the human electromagnetic field and the ability to make predictions about a person, including that person’s skills and competences, based on that field.

I decided not to expand on this part regarding more academics, who currently are or have been working within this field, because the findings of Hunt and Motoyama seem to be sufficient to establish the scientific foundation of the domain I am examining. Thus I do not consider it necessary to include other scientists with similar findings; also, I have found none with contradictory findings. The fact that I discovered no scientists with contradictory findings could be due to the fact that skills and competences are a rather unexamined area since scientific research, as previously mentioned, seems to be directed towards diagnosing and curing diseases.

The description of the chakras that Motoyama works with is supplemented by Professor of Yoga at The International Himalayan Vishvaguru Yoga University, Swami Mahasiddhananda, because he presents them in a manner more approachable for the contemporary scientist.
Part 4: Employee evaluation

For this part, the book “360° feedback” by Edwards & Ewen has been used, as it gives a general introduction to the 360 degree feedback, including its pros and cons, and how to apply it in practice.

The work of Hensel et al., has been used to further elaborate on and to ensure the statistical validity of this theory.

Everything in this thesis is based on the instructions which Associate Professor at Copenhagen Business School, Pia Bramming, once gave to us HRM students: ‘Here at Copenhagen Business School you are only allowed to say something if it is based on logical thinking or it is the application of a scientific theory.’

Throughout the entire thesis I have made it very clear whenever I reflected upon the findings of the scientific theories I applied, underlining their relevance to the domain I study.

I limited my personal comments to a minimum, and whenever I expressed them, I made it very clear that they represented my own personal believes and they were not necessarily based on scientific findings.

Outline

In this thesis I shall start by analysing Strategic Human Resource Management and its importance, if any, for the viability of the modern company.

Therefore, the subject of analysis - based on the Resource-based view – is whether employees are important for a company. In case that it would be concluded, based on the HR literature, that they are important, there is a point in examining how to attract, hire and retain the best employees, for which performance predictors could be useful tools.

Afterwards, in part 2, the analysis will focus on the recruitment process such as it is described normatively by Lazear & Gibbs. The purpose is to see if there is any potential to develop it, or if it already attracts and on-boards the best people for the company, in which case spending time and resources on developing another recruitment tool may not be an instrumental rational action.
In this part I shall also analyse the costs associated to improper recruitment, which also helps determining the need for another recruitment tool. Logically it can be concluded, that if the potential costs of hiring the wrong candidate for the job are high, then there is an economical incentive for the company to hire the right person.
I shall also analyse the best performance indicators science has found so far in order to see whether the predictions we are currently able to make call for more effective performance prediction tools.

Then I shall discuss the recent findings of neuroscience, more specifically Behavioural Neuroscience, in relation with making predictions regarding the recruitment process. This is because there is a widespread belief these days that the human being can be “boiled down” to his mental processes.
If this is true, then any attempt to understand the human being and to predict his or her skills and competences should be based on understanding the brain processes of that person. If it is not true then there is a point in developing alternative recruitment tools, which might contribute to the understanding of the human being in an organizational context from perspectives previously not included in the academic research.

In the end of this part I shall provide a description of the human being based on mathematics, in order to justify why humans are more than their brain processes, an argument highly relevant for skills and competences prediction.

In part 3, I shall start by analysing the energetic structure of the universe. My aim is to explain the principles that govern this universe and how they affect everything in it.

I shall continue by analysing one of the described principles, electromagnetism, in detail. My reason for doing this is because this principle is the foundation of the human energy field, and since I wish to analyse this field, it is necessary to have a clear understanding of what that energy field is, what it consists of, and how it works.
Analysing energy is of course a huge task, considering that everything in the universe is made of energy, so I shall focus on providing a description of frequencies, amplitudes and wave length, as well as of the way that energy waves interact, a phenomenon scientifically termed interference.
These aspects are the basis of the scientific work of Hunt and Motoyama and therefore this discussion will help us attain a better understanding of their research.

After this I shall go into detail concerning the theoretical aspects of the energetic structure of the human being. There are various, complementary, theories, and I shall focus on three major approaches: chakras, meridians and energy fields.

Then, in part 4, I shall examine one of the tools used by modern companies to evaluate their employees' performance. Hereby I intend to analyse whether or not these tools can be used to see the energetic structure of the human being through, and thus help determine which energetic structure leads to which production outputs. Here I shall use the 360-degree feedback, as presented by Edwards & Ewen.

I decided to include the theory because by getting a “complete” (360-degree) feedback, at least in theory, more aspects regarding that person’s qualities, skills and competences should become clear. If for instance feedback only comes from the direct superior of the person in question, certain aspects the boss had no personal interest in, might be neglected and therefore interfere with the “objectivity” of the evaluation.

In the end I shall conclude upon the findings of the thesis, and thus see if there is a foundation for further academic work within this field.

**Methodology**

The scientific foundation for this thesis is based on the concept known as (neo-) pragmatism and in this respect I am going to relate to the work of the former Stuart Professor of Philosophy at Princeton University, Richard Rorty.

**Pragmatism**

The purpose of a scientific theory is to define what truth is in order to determine whether or not we have attained true knowledge and to understand how we can relate to our findings.
The fundamental idea of pragmatism can be expressed be the phrase: ‘That which is true is that which works!’

Rorty argues that there is a truth ‘out there’ but that we - as human beings – can only access it through the way it appears to us. (Rorty, 1998: 1)

He continues with ‘... nobody should even try to specify the nature of truth.’. (Ibid: 3)

We have no way of defining 'truth' but through justification, Rorty continues, and justification is always relative to an audience. (Ibid: 4)

In relation to our so-called progress Rorty states that we are better equipped to attain the goals we have set for ourselves and to deal with the circumstances we believe we are faced with, than our ancestors were, yet that does not indicate that we are closer to any truth. (Ibid: 4)

Rorty continues that there is no ‘... truth, conceived of as an accurate representation of how things are in themselves, apart from human needs and interests...’ (Ibid: 4) and that as long as we turn towards philosophy for such truth we shall constantly alternate between scepticism and dogmatism. (Ibid: 4)

In Rorty's opinion philosophy showed us what problems we should not discuss, because they simply turned into metaphysical speculations that did not bring us closer to the truth. (Ibid: 6)

According to Rorty, no domain has priority over the other; moreover, he equals the truth derived from religion to that derived from the natural sciences. (Ibid: 6)

It can be added that, interestingly enough, Stephen Hawking's definition of science is in perfect accordance with this. (Hawking, 2011: 68)

One might argue that pragmatism is a “lazy” theory of science, because it doesn't search for metaphysical truths, regarding which the pragmatic view is that such metaphysical truths might

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4Personal note from the course "Filosofiens- og Økonomiensteorihistorie" by Lise Huggler. FLØK 1999-2001, Copenhagen Business School.
exist, but we can never get to know them other than through the way they manifest for us. Consequently there is no point is wasting time on metaphysical discussions.

I wish to end this discussion with a quotation by another pragmatist, Barbara Czarniawska, who writes that:

...there are much more serious dangers in life than dissonance in organization theory. Crossing the street every day is one such instance. We may as well abandon this self-centered rhetoric and concentrate on a more practical issue: it seems that we would like to be able to talk to one another, and from time to time have an illusion of understanding what the Other is saying. (1998: 274)

**Discussing the implications of selecting pragmatism as methodology**

The implications of choosing pragmatism as the scientific foundation for this, or any, thesis are vast, and thus it is correct to discuss them, as they form the basis for the further development of this thesis.

Rorty states that truth is always relative to an audience. This means that – impinging on the X-files – ‘The truth is NOT out there!’ However the statement is not entirely correct, because as Rorty argues, there might be a truth out there, only we have no way of accessing it. More correctly, we cannot even know if we have accessed it. In the history of philosophy this discussion is recorded in Athens where Plato’s successor, Xenophon, is quoted as having said: ‘We know nothing!’ and his successor, Aristophanes, is quoted as having added ‘... and even that is an assumption!’

This does not make knowledge relative; instead knowledge should be evaluated based on the paradigm in which it exists. In other words, it needs to be evaluated based on its own descriptions and predictions.

Rorty continues that one domain does not hold priority over the other. When the functionality of knowledge becomes the issue, the manner in which knowledge is attains turns less relevant. Consequently, a statement based on revelation can be considered equally “true” to a statement based on a mathematical equation.

5 Personal note from the course "Filosofiens- og Økonomiensteorihistorie" by Lise Huggler. FLØK 1999-2001, Copenhagen Business School.
For the purpose of this assignment, opening the door to a new domain, this theory of science states that all theories applied herein are to be considered “scientific”. Moreover, they should be evaluated based on what they describe and predict, assessing how endogenously consistent, not how exogenously consistent they are.

So the percepts of the Tantra-yoga system or the Taoist philosophy applied to this thesis should be considered on equal terms with the other theories applied, being evaluated based on their practical applicability, namely on what they describe and predict, not on their geographical origin or their association to our culture.

**Part-conclusion**

In this part I have stated that I choose pragmatism as the scientific foundation for this assignment. That means that truth, and thus true knowledge, is based on how things appear to us. We can never reach an understanding of what something essentially is, and there is no reason to concern ourselves with that. The only thing we can do is to understand how something appears to us, and then relate to that.

**Intermezzo**

So far I have clarified the fact that I am studying the energetic structure of the human being, because I want to analyse its underlying elements in order to contribute to an understanding of human skills and competences, so that organizations, employers and professional recruiters may improve the prediction criteria they resort to for the recruitment and selection process. I shall now continue with the actual thesis.
Part 1: Strategic Human Resource Management

In this part I shall analyse if and how important the strategic behaviour of a company is for its survival, and whether or not the Human Resource Management has an important role in a viable business model. Should it be concluded that Human Resource Management, including the recruitment and selection process of the best employees, is important for the viability of the company, then there is a point in continuing the analysis of how to attract and on-board the best employees.

People ask me what’s the most important function when you’re starting an organization or setting up the kind of culture and values that are going to endure.

The discipline I believe so strongly in is H.R., and it’s the last discipline that gets funded. Marketing, manufacturing — all these things are important. But more often than not, the head of H.R. does not have a seat at the table. Big mistake.

You are imprinting decisions, values and memories onto an organization. In a sense, you’re building a house, and you can’t add stories onto a house until you have built the kind of foundation that will support them.

-- Howard Schultz, Chairman, President and C.E.O. of Starbucks

A Brief History of Human Resource Management

Boxall, Purcell & Wright (2007) state that although the Human Resource Management field has its roots back in the 1920s in the United States of America, where a small group of visionary employers sought to replace the traditional command & control way of management with a more progressive ditto, which aimed at enhancing competitive advantages through cooperation, alignment of interest between employees and employers and the investment in the employees as a resource, the majority of the academic research within this field has been conducted within the last 30 years. (Lengnick-Hall et al., 2009: 64)

According to Lengnick-Hall et al., Human Resource Management can be divided into three sub-fields (Ibid: 64).

That of International Human Resource Management (IHRM), which deals with HRM across borders, including the challenges which might arise within organizations, for example due to legal and cultural differences. (Ibid: 64)
That of Micro Human Resource Management (MHRM), which deals with issues related to recruitment & selection, on-boarding, etc. (Ibid: 64)

Finally that of Strategic Human Resource Management (SHRM), which covers the overall HRM strategies and it includes areas such as performance measurement, the strategic contributions of HRM, etc. (Ibid: 65)

Studying the HRM curriculum given at Copenhagen Business School it becomes clear that these fields can be considered independent units from a theoretical point of view, yet in practice they might overlap; for example the fact that international recruitment is a combination of IHRM and MHRM and also, in order to fulfil the strategic human capital needs of the company, recruitment may be considered a combination of Strategic Human Resource Management and Micro Human Resource Management.

**The Strategic part of Human Resource Management**

If Strategic Human Resource Management is a way for a company to improve its competitive position on the market through the use of Human Resources, then Human Resources, including choosing the right employees, become important for the company, because there is a direct connection between this and the financial results of the company, which then again links with the competitive position of the company and thus there exists a circle which can either be positive or vicious. (Boxall & Purcell, 2009: 57)

It is stated by Nohria et al. (2003), in their article “What really works!” that a company that has a clearly defined strategy being implemented in its daily operations is more successful than one that doesn’t.

Thus there is a point for the company to develop and implement a strategic plan, which includes all aspects of that company, including Human Resources.

The definition of strategy has been discussed for centuries, for example by Sun Tzu, Musashi, etc., and it could be the subject for a Master’s thesis in itself, however it seems easier to define it negatively than positively. (Boxall & Purcell, 2011: 39)

Mintzberg points out that a ‘strategic plan’ does not constitute a strategy, it is more correct to define strategy by the 'set of strategic choices that is revealed in the characteristic ways it behaves.’ (Boxall & Purcell, 2011: 40)
This means that the actual execution of the strategic plan is what matters in generating results for a given company, not the intention behind the strategic plan.

According to Boxall & Purcell there is ‘a reality “out there” that firms must deal with’ and sooner or later any given company will face “intelligent opposition” which it has to deal with (Ibid: 43) or “Schumpeterian shocks”, which may revolutionize parts of the industry and perhaps even the entire industry overnight, which it will have to relate to. (Schumpeter, 1950: 84)

A company is in a constant "fight" for survival, and since strategic issues are critical to the business model, getting them wrong leads to the fact, that the firm fails. (Boxall & Purcell, 2011: 43)

According to Boxall & Purcell, there are four critical elements in a business model; Marketing, Funding, Production system & Human Resource Management.

![Diagram](image.png)

**Figure 1:** The four critical elements for a business model to be viable. From Boxall & Purcell, 2011: 43

Each of these elements is not enough by itself; however if combined in the right way, they provide the company with a viable business model. (Ibid: 44)
The two-way arrows between the boxes indicate that the four elements are in a continuous interaction. No matter how automated the production process is, there is still the need for human beings to manage it. No matter how much funding a company benefits from, it still needs people to use that funding to accomplish its goals. No matter how loyal and competent its employees are, they probably want to get paid, thus requiring funding.

This means that ‘A competent level of HRM is not sufficient on its own but it is necessary for business viability.’ (Ibid: 45)

Therefore we can conclude that the Human Resource Management is an important part for a business in order to remain viable, yet not the only important part. Thus Human Resource Management must be treated on equal terms with the other three elements in order for a company to remain viable.

One might logically argue that, at least in theory, the possibility exists that for a specific company, for a certain period of time, one or more of these four factors might be of greater importance than the others.

For example, one could picture an IT start-up company with a small core of competent, enthusiastic founders, that is more dependent on funding and consequently it possesses ‘the necessary financial backing to pursue [its] business goals’. (Ibid: 43) than on marketing as the products the company intends to offer would first have to be developed before a specific need to market them arises.

From a practical point of view, at least some companies move further than the start-up phase, and thus it may be argued that during the entire lifespan of a company, most likely all four elements would be needed.

**Sustained advantage**

The viability issue is the fundamental strategic challenge for a company, yet at a higher level there is a problem hiding behind it. A company that survives the market "battle" is continuously working to build and defend competitive advantages. (Ibid: 46)

In the “classical” theoretical approach, where companies are in perfect competition, all companies will, in theory, generate the same returns for their shareholders, whereas a company which is able
to develop sustained competitive advantages, is able to produce profits above those which can be earned in a state of perfect competition (aka. rent).

As Human Resource Management is part of the viable business model, as previously stated, the ability to attract and on-board the best employees, for the needs of the company, becomes a critical issue. Logically it may be argued that on-boarding the best employees can help a company to develop advantages which are more sustainable than those advantages which can be developed by employing candidates who are not the best to fulfil the needs of the company, as it seems reasonable to assume, that a less competent person will not be able to develop advantages at the level a more competent person is able to.

**The process of strategic management**

The strategic management of a company is an on-going process, which starts the moment the company comes into existence and continues for as long as it exists. (Ibid: 50)

Since human beings perform the process, it is limited by their cognitive capabilities, and their more or less rational actions. Thus the development of competitive advantages for a company becomes a self-sustaining, or alternatively, vicious, circle, where hiring the most competent people generates a team with greater cognitive capabilities that can see more aspects of the competitive environment. Such a team will prepare better on how to manage that and thus improve the competitive advantage of the company. (Ibid: 51) Thus, logically, the recruitment of the best employees becomes a very important factor for a company.

**Part-conclusion**

In this part I have shown that the strategic behaviour of a company is vital for its survival, and that Human Resource Management is one of four elements in any viable business model. Thus the Human Resource Management, including hiring the best employees, becomes essential for the survival of the company.

This logically leads to a more specific analysis of the Human Resources of the firm. In order to do this, I shall adapt the perspective of the resource-based view.
The resource-based view

This concept is usually sourced to Edith Penrose who, in a time where the general economical discussion was focused on Industrial Organisation (Foss, 1996), began to look inside the company, to analyse how two companies differ in the way they apply their resources, and thus account for major performance variations between these companies. (Boxall & Purcell, 2011: 98)

The difference between the classical strategic analysis, for example Porter, and the resource-based view, is that the classical strategic analysis focuses on the external environment of the company – the opportunities and threats in the Porterian terminology - and how the company relates to that, while the resource-based view looks inside the “black-box” of the company and analyses its strengths and weaknesses. (Ibid: 98)

What is a resource?

One of the teachers of the HRM-line at Copenhagen Business School, Sami Boutaiba, once stated that Human Resource Management could either be seen as the Management of Human beings who have Resources, or as the Management of Human beings as a Resource.6

According to the resource-based view, a resource is not simply understood as an asset, in the formal accounting point of view, but it includes any feature of the firm with value-creating properties. This includes know-how, brand names, machinery, data-bases, logos, etc. (Ibid: 100)

A company can develop sustained competitive advantages through the way it uses its resources, because a competitor cannot imitate the knowledge and skills which, for example, the employees have gathered through their work experiences. (Ibid: 101)

The focus of the academics working with the resource-based view therefore is on the circumstances that make the resources of the company “inimitable” and “non-substitutable”. (Ibid: 101)

6 Private notes from the HRM course.
Chandler (1994) introduces the concept of “first-mover advantage” in his book “Scale & Scope”, indicating that the company that first started something, would have a competitive advantage towards other companies that try to do the same thing later. The resource-based view elaborates on this timing issue, stating that time and place matters in developing competitive advantages. According to the resource-based view a company can, over time, develop “core capabilities”. These abilities are unique for that specific company, as they are developed through the “life time” of the company and consist of: Employee knowledge and skill, Physical technical systems, Managerial systems, and Values and norms. (Ibid 108)

Thus the resource-based view gives the conceptual basis for asserting that human resources can be competitively valuable. (Ibid: 112)

The next issue that needs to be clarified is what it is about human resources that can be valuable and how a company can develop and sustain these sources of value.

**Human capital advantage**

According to the resource-based view, the human capital advantage is the fact that people vary in their capabilities and thus there is a specific value in hiring and retain the employees who can help the organization – at least - to survive, but hopefully also to make progress and grow. (Ibid: 113)

Practically, the resource-based view states that the individual employee - with his or her capabilities - constitutes a value for the company. Also some people have more and better capabilities than others and thus they represent a greater value for the company than others.

It is my work related experience that an attitude of “An employee = an employee = an employee” often prevails in companies. In other words, it is believed that any individual with a degree in engineering for example is considered equal with any other individual with the same degree and the same grades. Therefore the company does not consider all the other possible differences between two such employees, for
example how they can fit into the culture of the company, or with the people in their department, etc.

In this way many aspects, which - based on the resource-based view - could be potentially important and create value for the company, are ignored in the recruitment process. Thus it can be said that it is possible to decrease the number of errors that sometimes interfere with the recruitment process, by expanding the view upon employees together with their skills and competences.

It is difficult to prove that “An employee = an employee = an employee” perspective exists, although there are some indicators. For example this is the case with IBM, where the recruiter and the hiring manager are often located in different countries. The recruiter finds one or more candidates based on the criteria he knows the hiring manager is looking for, namely education and work experience. Then he schedules a phone interview between the candidate and the manager, who then decides whether or not to hire that person. This kind of recruitment process leaves out several value-adding potential aspects the candidate might possess, as it treats each candidate in a highly homogeneous way.

Based on such an attitude, recruitment becomes a “paper shuffling” task, looking through applications to see if the applicant has the right education and/or experience and not a strategic tool for adding long term value to the company.

The resource-based view challenges this perspective and it claims that each individual is unique. Therefore the hiring of each individual becomes important for the development of sustained competitive advantages for the company.

**Part-conclusion**

In this part I have shown, that according to the resource-based view, the individual employee, with his or her competences, can be an important value-generating asset for a company. Thus it becomes important for a company to recruit and retain the employees, which help it to develop sustained competitive advantages and to attain its strategic goals.
Part 2: Recruitment & Selection

Having established that the employees are important for the competitive success of a company, it logically becomes a crucial factor for any given company to hire and retain the best employees.

In this part I shall analyse the recruitment and selection process, as it is described in the theoretical work of Lazear & Gibbs.

Afterwards I shall provide a description of the empirical evidence regarding the results of the recruitment and selection process. I intend to clarify if there is a need to improve it and therefore a point in continuing the scientific research proposed in this thesis.

This part includes statistics regarding the costs of recruiting the wrong candidate for the task, as well as an analysis of the tools recruiters have at their disposal for predicting the performance of a candidate. This part will be based on the academic work of Hunter & Hunter.

**Recruitment**

According to Lazear & Gibbs a recruiter should hire the candidate with the highest expected output.

They give an example where you, as the partner in an investment bank in the financial district in London, known as the "City", have to choose between two candidates for a position as a junior investment banker, Gupta and Svensen. Gupta has the standard background for

As seen in IBM’s recruitment material
an investment banker, a degree in economics, some years of experience as a financial analyst
together with an MBA with a focus in finance and he has also worked at an investment bank as a
summer intern.
Lazear & Gibbs state that 'You feel that his productivity is extremely predictable, and that he can
produce £200,000 of value per year.' (Lazear & Gibbs, 2011: 3)

Svensen, on the other side, has a very unusual background for an investment banker, although she
seems very competent.
Therefore you consider her success much less predictable. She could be highly successful, in
which case she will add a value of £500,000 per year, yet she can also be a complete disaster, in
which case she will actually destroy a value of £100,000 per year. Considering that the two
outcomes for her are equally likely (50 per cent odds), the expected yearly outcome for both
candidates is exactly the same = £200,000.

The cost of each candidate is the same, £100,000 per year.

According to Lazear & Gibbs, the question of whom to hire might seem counterintuitive, but their
recommendation is to hire the riskier worker, in other words, Svensen. (Ibid: 4)

Their argumentation is that over a 10-year period Svensen’s upside potential exceeds Gupta’s by
far, £1.9M vs. £1M respectively, as she can be terminated after one year in case she is a disaster.

Lazaer & Gibbs continue their evaluation of a potential candidate based on the screening of that
person’s credentials.
According to them the reason to go through job applications is to look for different credentials,
which distinguish the applicants from each other. (Lazear & Gibbs, 2011: 27)

They state that the most important credentials ‘are generally the type of experience (job and
promotion history) the applicant has, the type of training (e.g., college major or MBA), and the
quality of school the applicant attended.’ (Ibid: 27)

Some of these criteria, one may argue, might be more or less relevant depending on specific
factors in the country in which the recruitment process takes place. This means that in Denmark,
the high standards set by the government for higher education free for everybody financed through the tax system, might level all higher degrees, whereas a country with private tuition fees might suffer because of “discount” universities where academic standards are not as high.

Now, I have included Lazear & Gibbs’s approach because it contains a logical flaw, which makes its conclusion invalid. Based on logic reasoning, there is no way in which we can determine future outcomes based on past events. For example, stating that having an MBA leads to a specific production output is an invalid logical assertion.

According to Pedersen (2000), the kind of reasoning which Lazear & Gibbs perform is as invalid as “All the swans I have ever seen have been white; therefore I know that the next swan I see will also be white!” This is a logically invalid string of reasoning, and thus the conclusion is invalid and it may diverge from the truth. It cannot be disputed that a logically invalid string of reasoning may lead to a true conclusion – in the example previously given, the next swan you see could be white - yet as the purpose is to examine a tool for making more accurate predictions, that is not the point, as we, a priori, can not rely on an invalid string of reasoning to lead to a true conclusion.

It may also be true that, statistically speaking, there might be a connection between past achievements and future performance, which is the basis for IBM’s recruitment philosophy referred to as the “BAR” – Background, Actions & Results. The scientific research dealing with this issue will be analysed later based on the findings of amongst others Hunter & Hunter.

Lazaer & Gibbs continue by discussing the “informativeness of the credential” and state that there must be a positively correlated connection between the ability to perform well on the job and the ability to obtain the credential. They state that a university degree is only a useful credential if university graduates have a history of being more productive in the job for which there is an opening. Once again we may question the validity of the logic in their reasoning based on the previously mentioned factors.
The informativeness of a credential can either be that the person who has gone through the effort to obtain the credential has thus obtained knowledge or skills which are directly useful for the job for which he is being hired, which, they argue, might be so for a person who has obtained a CPA (Certified Public Accountant) or an MBA, or that the holder of the credential has thus proved that he possesses certain innate abilities which make him more capable to perform the task in question in a more productive way.

Their example concludes that a person who obtains a high score on an intelligence test has thus proven to be better at performing a task for which intelligence is required. (Ibid: 27)

Lazear & Gibbs continue that credentials involve a certain effort and that it would be possible for somebody with the right qualifications to obtain the credential and impossible for someone without the right qualifications. (Ibid: 27)

Thus the credential becomes a way in which one can separate the qualified applicants from the unqualified applicants in a reliable manner; this in the opinion of Lazear & Gibbs.

If the credential is too expensive for both the qualified and the unqualified workers, then it will not be of help in sorting the applicants, because neither of the groups will have it. (Lazear&Gibbs, 2011: 28)

For example, requiring that an administrative HRM worker should have a Ph.D. might be too high a standard to set, as a person with a Ph.D. most likely is too high qualified and too expensive to do simple administrative tasks, whereas using a Ph.D. as a credential for choosing a university teacher is a perfectly valid credential, in order to maintain a high level of academic standards at the university.

The necessity of a cost for obtaining the credential probably makes it more predictable, statistically speaking, according to Lazear & Gibbs.

It can be argued that this way of predicting job performance only focuses on the technical part of the job.

Thus it might be a perfectly valid criterion for choosing an astronaut to send on a single-man mission out in space; you want someone with the technical competences to be able to deal with anything which might go wrong.
On the other side, in a situation where somebody needs to interact with other people, judging solely based on technical competences does not seem like a complete evaluation criterion. Will the person who is the best accountant necessarily also fit into the department in which he works? Will the person who is technically best at doing a task also be the best department manager? Etc.

According to Lazear & Gibbs the efficiency of the test lies is determining the profitability of the screening. They state that a recruitment process is a situation with asymmetric information, where the applicant knows his or her value whereas the recruiting company is trying to evaluate the value of the candidate in order to determine if he is the correct person for the job. (Ibid: 29)

They continue that there are several ways of making a test more effective. One of them is to make it cheaper to administrate, another is to make it more accurate so it can better predict candidates who are desirable versus those who are undesirable. An inaccurate test, they continue, might accept candidates who should be rejected and reject candidates who would be profitable to hire, thus losing potential for the company (Ibid: 30).

Another element they mention is that screening is only profitable when there is a downside risk of hiring a candidate, which is greater than the costs related to the screening. (Ibid: 31)

Therefore it becomes obvious that any test or, in other words, recruitment tool, which helps making the selection process more predictive, can add value to the company if, and only if, the costs of performing the test compensates for the downside risk of hiring the wrong candidate.

Their statement, that there is a situation of asymmetric information in the recruitment process, can be questioned. It is not the fact that there is a situation of asymmetric information, but how much and how important that asymmetric information is.

One may ask, more or less rhetorically, if all people know exactly how competent they are. Do people know which of their competences are valuable for the company at which they apply? And also how valuable their skills are?

My personal experience from working with recruitment in Romania, where companies go through vast efforts, including the threat of lawsuits, to keep salaries confidential in order to obtain a financial benefit from the ignorance of their employees, and where candidates are always asked to
state which salary they consider they are eligible for, without the company revealing any number regarding the salary it is willing to pay, is that people, generally speaking, do not know their own financial value for the company. Some candidates ask for much less than the company is willing to pay and others for much more.

This question can also be reversed. Do all companies know exactly how to supplement their existing resources in order to obtain their strategic goals? Do they know exactly what each candidate will contribute to the company, at all levels, not just functionally speaking?
I will not go further into this discussion, as it is not the scope of my thesis. I have stated a few objections, which in my opinion and my experience as an IBM Recruitment Specialist are common sense questions, which the candidate as well as the recruiting company has an advantage from reflecting upon.

Logically we can argue that there also exists an asymmetric information situation in a recruitment situation, considering the company knows exactly what it is looking for and which of the candidate’s skills and competences bring value to it.

We can assume that it would be in the best financial interest of the company to remove this asymmetrical information, because the administrative part of the recruitment process, the screening of job applicants and CV’s, represents a financial cost for the company. Therefore it is better for the company to make the job description as accurate as possible, and thus to diminish the total number of applicants, but at the same time to increase the compatibility of the applicants for an open position.
In practice this might not always be the case though, because there is also an effort connected with writing the job description and since it is not always the same person writing it and performing the screening process, the person responsible for writing it can minimize his efforts at the expense of the person doing the screening.

Based on this discussion of asymmetric information, it can be concluded that it becomes even more financially profitable for a company to have a screening tool that predicts the compatibility of the candidate with the position in question and with company structure as accurately as
possible, without being dependent on the subjective evaluation and/or without cost minimizing behaviour of the applicant, recruiter or manager.

Probation

Lazear & Gibbs state that:

*The screening methods described may be useful, but are imperfect. An important concern is that they are only proxies for what the firm really cares about – how the person actually performs the job. In many cases, the only way to truly tell if a job applicant is a good fit for the job is to have them perform the job itself. Thus, a final approach to screening is to have the job applicant do the job for some period, either very briefly during interviews, or more extensively during some testing period. The most elaborate form of this is to hire a worker for a probationary period, and only hire them long-term if their performance during probation is adequate.”* (Ibid: 32)

This statement seems intuitively correct, namely companies seek for a person who can do the job in question and the best way of predicting if he can actually do that job is to let him do it. As it will be shown based on the research by Hunter & Hunter, this may not be statistically true, or at least not the best statistic predictor of future job performance. Practically a company may end up hiring the wrong person, or at least not the optimal person, if it bases it recruitment decision solely on how that person performs the job.

It might be argued that in theory, there could be several reasons for this. One is that not all jobs are static, therefore a certain transformation and development is needed from the person performing the job. Thus the ability to do the job well might diminish in value as a performance predictor, if the job changes faster than that person can follow.

Logically one may also argue that a person in a recruitment situation might be motivated to show the best performance he is capable of - assuming, for reasons we shall not dwell further with here,

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7 I describe the recruitment process as being performed by a large firm, where the manager seeking an employee is not necessarily the one who performs the actual recruitment process, but a person specialized in this task, in other words a recruitment specialist. I am fully aware this is not the case in many situations, for example in small and medium size companies that for various reasons, do not have recruitment specialists conducting the recruitment process.
that the person wishes to get the job no matter what - yet he may not be able to keep up to that performance level during the actual employment. The reason for that could be that the necessary effort for delivering a long time high performance exceeds that person’s resources, or that the person is lazy and strategic and only performs well until he has obtained a permanent employment contract, etc.

It seems however that a probation period before a final recruitment is a good idea. Lincoln Electric, for example, is known for its two year probation period after which the employee is hired for life or until he wishes to terminate the employment contract. Also LE is considered one of the most efficient, if not the most efficient, company, in the world. (Case: Lincoln Electric, 1983)

**Signalling**

The last element from Lazaer & Gibbs to be included in this analysis is their discussion of signalling. They start by stating that ‘Most people have a good idea about their skills, work ethic, and ambition – the things that make them good employees.’ (Ibid: 33)

That is a very interesting statement, unfortunately they do not document where they have that information from.

They continue that if candidates and companies would only share this information with each other honestly, a lot of problems could be avoided, as a company could just tell which type of candidate it wishes to recruit and the right candidates would apply. Thus all the time and money invested in screening could be avoided.

Since apparently Lazear & Gibbs are of the belief that human nature is greedy and egotistic, they claim that such an approach would not work in practice, as a company pays higher wages to the people with higher skills and thus the people how do not have these high skills would be motivated to lie about their skills in order to receive the higher compensation from the company.

This claim regarding the greediness and egocentrism of human nature is arguable. Throughout the history of mankind this has been one of the main questions of philosophy, while philosophers who are considered amongst the greatest known to mankind stated contradictory views. Philosophers such as Rousseau, Machiavelli, Plato, and Hobbes come easily to mind.

One day, science may conclude whether or not human beings are essentially good and altruistic or bad and egotistic, but so far this seems to be another question, which has yet to be clarified.
Even within the domain of economy, previously dominated by the reasoning presented by Adam Smith, namely that one benefits society best by pursuing one's own self interest, new perspectives seem to be arising, perspectives that challenge the egotistic belief of the human being, see for example the debate between the agency theory, versus the stewardship theory. (Boswell et al., 2006: 506)

The solution Lazear & Gibbs suggest for this situation is creating a system which promotes the self-selection of the job candidates based on a low salary during a probation period after which candidates who pass the probation period are to receive a salary high enough to compensate for the lower income during the probation period. This way, the company could test people at work and then only choose to hire the people who provide sufficient value for the company. (LaZear & Gibbs, 2011: 35)

This seems like a good recruitment method, yet as we shall see it also has its shortcomings. First of all, it is based on the assumption, that highly qualified people are willing to work a period for a lower salary, in order to prove their worth and then get a financial compensation afterwards. Logically it may be argued, that if all companies applied this deferred payment system, any given company, which develops a way to predict the best candidates, would be able to attract all the good candidates by offering them the salary they are entitled to based on their competences, and not a lower salary as other companies, therefore obtaining a competitive advantage.

Secondly it might not always be possible to hire different people to perform the task for a period of time and then choose the best.

What if it is the most important position in the company, the CEO? (Nohria et al., 2003) Would you hire three people as the CEO for a period of time and then choose who did best and hire that person on a permanent basis, or would you hire each of them for a shorter period of time and then evaluate them? How long should each hold the position in order to be able to evaluate his performance, and how much value would he be able to destroy in that period? How might the stock market react to such a recruitment approach?

Their suggestion is fully applicable for certain tasks in certain situations, assuming that people are willing to accept a deferred reward, yet it is not a universally valid and applicable method. Therefore it points to the necessity to improve the recruitment process based on other performance prediction tools.
Recruitment mistakes

One aspect that is missing from Lazear & Gibbs’ vision - from a pragmatic point of view – is the fact that they do not discuss all the possible mistakes the recruiter might make.

They describe an ideal situation in which the recruiter is perfectly objective and capable of evaluating the candidates without letting his own preferences or assumptions influence the recruitment process.

I have found no academic statistics about recruitment mistakes, yet the discussion of this subject amongst HR workers, for example on Linkedin, is extensive. Barry Deutsch, a well known Master Executive Search Recruiter and co-author of the book "You’re NOT the person I hired" as well as of numerous Linkedin articles, has written a whole series of articles about the various mistakes generally appearing in the recruitment & selection process. He states that due to these mistakes, recruitment success rate is around 50% and that by avoiding these mistakes it could reach 80-90%.

I shall neither support nor refuse his statements, but let them stand for what they are: his personal beliefs.

As you become an IBM Recruitment Specialist you go through a lot of instruction regarding the subjective interferences in the recruitment process, such as the “halo-effect” or the "Just-like-me-effect" so you become more aware of them and hopefully will be able to avoid them in practice. This is not a scientific claim, that personal biases influence the recruitment and selection process; however it might be considered likely to be so.

Part-conclusion

In this part I have shown that the normative recruitment method, as represented by Lazear & Gibbs is a valid and applicable process for certain job openings.

What might be considered as its weakness is that it is based on subjective evaluations of the candidate made by the recruiter, which could be biased, and thus not necessarily provide the company with the result in its best financial interest.

The criteria they set for determining which candidate to hire is exclusively focused on the person/task-fit and ignores almost completely the relationships which the candidate will have

The participating knowledge is

with his colleagues. This could be an influential factor as work climate might influence performance. Furthermore, it may not include all relevant aspects of the candidates’ skills and competences.

Most importantly, it focuses on predicting future success based on past achievements, which has logically been proven not necessary to make valid predictions.

**The cost of hiring the wrong person for the job**

As Lazear & Gibbs have mentioned, the value of a screening and selection tool depends on the downside risk of hiring the wrong person for the job.

'It does not, from a financial point of view, make any sense to use any kind of screening and recruitment tool if the downside risk for an applicant is close to 0, which for example could be obtained through a pure pay-for-performance salary. On the other side, it does make a lot of sense to use all screening and recruitment tools as the downside risk rises, for example when recruiting for senior management positions.'

Practically, the downside risk for an employee is, by PeakPerformers⁹, calculated to be around 162,000 DKK. Væksthus for Ledere¹⁰ states that the cost of hiring the wrong leader is around 1,000,000 DKK or more.

At IBM we are told that the cost of hiring the wrong person is around 1-5 times that person’s yearly salary¹¹.

Research by O’Meara et al. states that ‘the cost of replacing a staff member in 2007 was 150% of the person’s salary and this figure has since increased.’ (O’Meara et al, 2013: 288)

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¹¹IBM Internal educational material.
It is obvious that the more responsibility a person has the more downside risk there is to the position. One could ask what the cost for Enron from having Kenneth Lay as CEO and President was.

Thus any recruitment tool, which can help predict future performance, becomes valuable to the company, if and only if, the price of using it is lower than the downside risk, connected with the hired candidate destroying value.

**Performance predictors**

In this part I shall analyse some of the ways in which we can predict the future performance of a candidate in a job function. This in order to see if there is any need for further recruitment and selection tools or not.

In case our prediction skills are already at the higher end of the scale, there would be no need in investing resources to develop another recruitment and selection tool; however if they are only average, there could be a financial interest for the recruiting company in improving its accuracy in the recruitment and selection process.

For this analysis the academic work of Hunter & Hunter will be applied.

According to Hunter & Hunter there is a huge gain to be obtained by having the right person for the job. In their estimation, the minimum domestic gain in 1980 for the USA would have been 80,000,000,000.00 USD, if the best people had been selected to hold the top positions. (Hunter & Hunter, 1984: 72)

Their goal is to provide companies and the government with a prediction tool that can enable the best people to be selected for the job, and thus obtain and maintain competitive advantage.

According to Hunter & Hunter the tests used to predict future job performance are extremely important as *even the smallest mean validity is large enough to generate substantial labour savings as a result of selection.* (Ibid: 80)

One of their findings which is important for this project is that peer ratings have a high validity; however there are two criteria which need to be fulfilled for them to be valid. One, the candidate
must already be trained for the job. Two, the candidate must activate in a work context where the peers who are to rate him are able to observe his performance. (Ibid: 85)
This aspect will be elaborated further in part 4 in connection with the 360 degree feedback.

The findings of Hunter & Hunter show that the best performance indicators are:

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<td>.37</td>
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</tr>
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</table>

(Ibid: 90)

These performance indicators show that the best single prediction indicator is cognitive ability, meaning the intelligence (IQ) of the candidate. If a company hires only based on this indicator, meaning always hires the most intelligent candidate, it will choose the best person for the job in 53% of the cases.

As previously stated there seems to be no academic statistic of how often recruitment is successful; however there are many discussion about how to define a successful recruitment. (Brix, 2010) A qualified guess, based on Linkedin articles by professional recruiters, for example the already mentioned Barry Deutsch, is that a recruitment is considered a success, in the sense that the right person was hired to do the right task\(^\text{12}\), in around 50% of the average cases, and in

\(^{12}\) It is an interesting statement to claim that “the right person” was hired for “the right task”, as we can never be sure that another candidate would not have performed even better, so perhaps,
75% of the cases when hiring for top-executive positions, where recruiters have more time and resources at their disposal.

If this is true then the company could save a lot of money on recruitment and get a comparable success rate just by hiring based on intelligence, at least in the average cases.

Interestingly enough Lazear & Gibbs did not include intelligence as one of their most important credentials. They did, however, include job try-out, which is the second highest performance indicator, with 44% prediction accuracy. This is combined with experience, which they also include and which has a performance indication accuracy of 18%, academic achievement, which has a performance prediction accuracy of 11% and finally education with 10%. So they use some of the performance indicators, which are indicated based on the academic research by Hunter & Hunter.

A very important issue with regard to this is that, ironically enough, Hunter & Hunter emphasize that using two performance indicators may diminish performance predictability if they are calculated equally.

They write that:

*Many companies now use several predictors for selection. However, the predictors are not being combined in accordance with the actual validities of the predictors but are weighted equally. Under those conditions the validity of the total procedure can be lower than the validity of the best single predictor.* (Ibid: 91)

Hunter & Hunter give the example that if cognitive ability (intelligence) is used together, and equally, with the interview score, the inappropriate combination of these two scores would lead to a performance indicator accuracy of 47% at most, instead of the 53% which the cognitive ability test alone would give.

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inspired by March’s “garbage can” theory, it would be more correct to state that the person hired did an acceptable performance in the given task.
This is an aspect that Lazear & Gibbs do not take into consideration at all, namely that some of the criteria they set are more important than others; thus the performance predictability of their recruitment method deludes itself, due to improper statistical calculations.

In order to analyse if Lazear & Gibbs’s recruitment philosophy is able to predict with 100% accuracy who is the best candidate, their performance predictors should add up to 100% in situations where it is weighted correctly. Their prediction is based on: 44% (Job try-out) + 18% (experience) + 11% (academic achievement) + 10% (education) + 14% (the interview) = 97% and this is not weighted correctly.

If all their credentials are weighted equally Lazear & Gibbs’s recruitment philosophy gives a total performance prediction of 19.40%\(^\text{13}\) where again there exist a possible overlap between the performance predictors so the actual result could be lower than this.

Thus their recruitment philosophy does not give a 100% certainty of choosing the best candidate for the position.

One may argue that it probably gives prediction accuracy lower than the 19.40% because it seems reasonable to assume that there is a certain overlap in predictability amongst their credentials.

For example part of the 11% prediction from the academic achievement could already be included in the 10% prediction from education. Part of the 18% prediction from experience could already be included in the 44% from job try-out, etc.

It also seems likely, based on my experience with interviews at IBM that interviews focus mostly on education and experience, and thus overlap with those prediction factors.

From a practical point of view, it is also my experience at IBM, that all indicators are considered to be equal amongst most recruiters, which could be the reason why interviewing is as low as it is, with a validity of only 14%.

I shall also include the works of Wright, Lichtenfels, & Pursell (1989) together with that of McDaniel et al. (1994), as described in O’Meara (2013), who finds that:

\[
\text{The average validity of interviews was found to be } r = .26 \text{ (a high degree of statistical validity)}
\]

\[
\text{Structured interviews were more valid (} r = .31 \text{) than unstructured interviews (} r = .23 \text{)}
\]

\[\text{13 } (0.44 + 0.18 + 0.11 + 0.10 + 0.14) \times 0.2 = 19.40\%\]
Situational interviews were more valid \((r=0.35)\) than experience-based interviews \((r=0.28)\)

Panel interviews were less valid \((r=0.22)\) than individual interviews \((r=0.31)\)

(O’Meara, 2013: 128)

I chose to include this statistic partly because it is of a more recent date than that of Hunter & Hunter – 1984 vs. 1994 – and partly because the results are statistically different.

Part-conclusion

In this part I have shown that there is an academic foundation for making predictions about performance based on certain credentials, which the candidate may or may not possess.

I have also shown that these performance indicators have to be used correctly in order to have the optimal performance predictability.

I have further more shown that the normative recruitment process, as represented by Lazear & Gibbs, does not apply these performance indicators correctly, as it does not even consider that one credential might overlap with another, whereas its predictability is diminished.

Finally I have showed that, according to Hunter & Hunters financial calculations, there can be a huge gain is one came up with any theory which could help making the performance prediction within the recruitment and selection process more accurate.

Neuroscience

The purpose of this thesis is to analyse a tool for making predictions about the human being, which can help predict who will be the best candidate for a position.

If what we consider the human being, including his skills and competences, is "just" the outcome of certain processes in the brain of each individual being, then logically, all the effort of understanding a human being should be based on understanding that person's brain processes.

There is a lot of research going on within the field of Behavioural Neuroscience, which tries to predict the future behaviour of a person based on his or her neuronal processes. This is part of the
Human Brain Mapping program\textsuperscript{14}, which amongst its participants counts Stanford University, Sackler Institute, Cornell University, Harvard Medical School, etc.

The practical tool is called “BrainPerform”, and it gives an evaluation of the capacities and skills of the tested person divided into different categories like: Leadership, Decision Making, Problem Solving, Interpersonal Relationships, etc.\textsuperscript{15}

The quality which, in my opinion, makes this evaluation tool better than most of the other evaluation tools I have examined in my professional career as a Recruitment Specialist, is that it is cultural free. The person being tested does not know exactly which skills or competences are being tested, like a MENSA intelligence test,\textsuperscript{16} but he acts in accordance with certain instructions as well as he can. Thus it is possible to conclude which parts of the brain are active and thus logically, to determine that person’s qualities and competences based on empirical observations from neuroscience, assuming that a person’s qualities and competences come from or have a physical projection in his brain.

The point, which in my opinion makes this kind of testing unreliable, is that it is based on the findings of neuroscience. Therefore the person being tested can study neuroscience and realize which elements are being used and thus prepare for them.

An example, which is used in the actual BrainPerform test, is the Iowa Gambling Task (IGT), which is a four-armed bandit problem of a great complexity. (Glimcher et al., 2009: 354)

By knowing, for example, what the Iowa Gambling Task is before being tested, you have the opportunity to influence the test and thus get a score, which is different than that of a person who has no previous knowledge of the Iowa Gambling Task. In this way, you can affect the test result so it becomes more aligned with the purpose the company is pursuing.

This is based on the assumption that you know which criteria the company is searching for, and that might not be a valid assumption in real life situations.

Based on the previously mentioned arguments, the logic conclusion is that neuroscience can make valid predictions about human behaviour, which can be integrated in the recruitment process. However they may not reveal everything about the human being is and therefore other methods

\textsuperscript{14}www.humanbrainmapping.org, accessed on 10th of April, 2014, at 10:41 GMT -2.
\textsuperscript{15}www.brainperform.ro, accessed on 8th of April, 2014, at 8:50 GMT -2.
\textsuperscript{16}www.mensa.dk, accessed on 1st of July 2014, at 09:45 GMT -2.
may be useful for going deeper into the human being or at least for including other aspects of the human being and thus getting better prediction results.

In the course "Neuroeconomics" at Copenhagen Business School, I have analysed the findings of neuroscience in connection with the recruitment and selection process, and based on these findings I concluded, that there are several ways in which neuroscience can help the recruitment and selection process, for example through an increased objectivity in the recruitment and selection process, through a better understanding of the decision making, etc. (I attach the exam paper I submitted as attachment 1)

The claim, that the human being is an outcome of brain processes and thus he can be reduced to a series of algorithms is known as "Strong Artificial Intelligence". According to the supporters of the Strong Artificial Intelligence, consciousness arises from the power of the human brain and the day mankind is able to make computers as powerful as the human brain it will be possible to "upload" the content of the human brain to a computer and thus have, not just an exact copy of that person, but that person himself. (Penrose, 1989: 28)

One could logically conclude that there is no scientific proof supporting the theory of Strong Artificial Intelligence, as mankind does not possess a computer with the same power as the human brain and thus the theory cannot be falsified.

There are however scientific claims stating that the human being cannot simply be represented by algorithms.

In 1900, at the International Congress of Mathematicians in Paris, David Hilbert discussed various mathematical problems which he considered to be the most important for the following century. One of these problems is known as "Hilbert's 10th problem", or the "Entscheidungsproblem" and it seeks to find if there 'exists a general algorithmic procedure for resolving mathematical questions – or, rather, for an answer to the question of whether or not such a procedure might in principle exist.' (Ibid: 45)

If such an algorithm exists, or more correctly stated, if it could exist in principle, then logically speaking, human brain processes could be based on a series of algorithms; if such an algorithm
could not exist, even in principle, then it can logically be concluded that the human being is something more than a – let us say – bio-computer performing its functions based on a series of algorithms.

Penrose states that in 1936 Alan Turing proved that such an algorithm cannot exist, even in principle, and thus that the human being can not be completely described by an algorithm. (Ibid: 82)

Penrose’s conclusion, based on these arguments is that the human being is more than the processes in his brain. He does not go into a discussion about what this “more” is, and neither will this thesis, as the point has already been stated clearly; the human being is more than his brain processes and he can thus not be described completely based on them. Thus there could be an improvement in the predictions regarding a person's skills and competences by also including elements other than neuroscience.

**Part-conclusion**

In this part I have shown that the human being is not only his/her brain processes. This does not, in any way, state that the brain processes of a person are not important, or that they cannot be used to make predictions about that person. It only states that if we have perfect knowledge of the brain functions of a person that would not give us perfect knowledge about that person. Thus there is a point in having performance predictors within recruitment which also work on levels other than brain processes.
Part 3: Quantum Physics and the Principles of the Universe

In this part I shall describe the universe as presented by Quantum Physics. The point is to establish the energetic structure of the universe, in order to lay the foundation for the later work with the energetic structure of the human being.

The universe and its principles

According to Stephen Hawking the universe was created around 15.000.000.000 years ago, plus/minus 5.000.000.000 years, and it ‘... is governed by laws\textsuperscript{17} of nature, and created according to a blueprint we could someday learn to read.’

(Hawking, 2010: 26)

These laws are universally valid, meaning that they govern everything in the universe, and any deviation from them, such as a miracle, would have enormous consequences, or in other words, it is impossible. (Ibid: 112)

The known forces of nature can be divided into four classes, which are:

1. Gravity. Gravity is the weakest of the four forces, but it is a long-range force and influences everything in the universe as an attraction. (Ibid: 132)

2. Electromagnetism. It is also a long-range force much stronger than gravity, but it acts only on particles with an electrical charge, being repulsive between charges of the same sign and attractive between charges of the opposite sign. As Stephen Hawking states: ‘Electromagnetic forces are responsible for all of chemistry and biology.’ (Ibid: 133)

\textsuperscript{17} Stephen Hawking uses the term "law" whereas I prefer the term "principle", other Quantum Physicists refer to them as “forces”. In the following, these three terms are used as synonyms.
3. Weak nuclear force. This force causes radioactivity and it plays a vital role in the formation of the elements in stars and the early universe. We do not interact with this force in our everyday lives. (Ibid: 133)

4. Strong nuclear force. This force holds together the protons and neutrons inside the nucleus of an atom, as well as the protons and neutrons themselves. This force is the energy source for the sun and nuclear power, yet as with the weak nuclear force, we are not directly in contact with it in our daily lives. (Ibid: 133)

Considering that this is not a thesis about Quantum Physics I shall not go further into the discussion at this level. The point for including these elements in this assignment is to base the theory upon a universally valid theory, Quantum Physics, and not upon empirical observations, or speculations, as these have proven to be very fragile.

Quantum Physics states that electromagnetism is responsible for all of chemistry and biology and thus it becomes relevant, considering the scope of this assignment, to examine it in detail, and later, to see if and how, electromagnetism influences human beings and our skills and competences.

**Electromagnetism**

I shall here give a brief introduction to electromagnetism, as this will be an important element in the further study and understanding of the possibility to predict human skills and competences based on electromagnetic measurements.

The theoretical foundation for this part is based on Severinsen (2012).

Severinsen states that there are many things, which can with advantage be described as waves, for example:

- Light, which can be described as electromagnetic waves
- Sound, which can be described as pressure waves
- Waterwaves

(Severinsen, 2012: 127)
This thesis will only focus on the electromagnetic waves known as “light”, as they are the ones being studied by scientists in connection with the human electromagnetic field.

**Wavelength**

The wavelength is defined as the distance between two consecutive wave tops. (Ibid: 128)

The only difference between for example X-rays, ultraviolet radiation, visible radiation (380 nm – 740 nm), infrared radiation, microwaves and radio waves is the wavelength. (Ibid: 146)

Stephen Hawking states that the wavelengths we can see with the naked eye, are those which the sun radiates most strongly, and thus our eyes have developed to see them and he states further, that if we ever encounter beings from other planets, they will most likely have the ability to see the wavelengths which their sun radiates most strongly, in other words, wavelengths which could be invisible to us, and continues – jokingly – that ‘... aliens who evolved in the presence of X-rays might have a nice career in airport security.’ (Hawking, 2011: 118)

Thus it can be concluded that there are electromagnetic energy fields, which surround us, and possibly affect us based on the laws of the universe; however we are not able to see them, because our biology is not adjusted to it.

This aspect will be elaborated further in the part concerning Hunt’s measurement of electromagnetic fields.
**Amplitude**
Is defined as the maximum oscillation of the wave, meaning how high the wave goes, thus how powerful it is. (Ibid: 128)

**Frequency**
Frequency is defined as the number of repetitions of a sequence within a defined period of time. (Ibid: 129)

**Interference**

When two waves, which travel in the opposite direction, meet, they are transformed to a common wave top, which is higher than the wave top of the two individual waves. This is defined as a constructive interference between the waves. (Ibid: 132)

If two waves meet, one being high and the other one low and both having the same amplitude, they can even cancel each other out during their meeting. This is known as destructive interference. (Ibid: 132)

A relevant scientific question is, if we - by deepening these studies - one day might be able to conclude, that the synergy effect we sometimes experience in teams, is due to constructive interference. Further research will be needed to clarify these aspects; however Hunt's research gives certain indications that it might be like this, an idea which will be discussed later.

**Criticism of Quantum Physics**

It is an interesting challenge to criticize a scientific theory for which there are no empirical inconsistencies. (Hawking, 2011; Faye, 2010)
According to Rupert Sheldrake, the belief that the universe is a "closed" system, which can be described by the language of mathematics, derives from the influence of Plato’s philosophy. Being a biologist, Sheldrake argues that the "laws" of the universe might be dynamic, such as they are in a biologic system. (Sheldrake, 2009 & 2012)

It is beyond my understanding and capability to see which side is right, however, I find it unlikely that gravity for example is a “dynamic” force, in biological terms, and that it thus might develop throughout time.

Therefore I consider the principles revealed by Quantum Physics as being valid.

Discussion

In this part I have given an introduction to Quantum Physics, to what electromagnetism is, as well as to how it works and interacts.

My purpose is to have a better understanding of some of the phenomena, which, according to Quantum Physics, are caused by electromagnetism – like human chemistry and biology. Since electromagnetism is a universal principle it must apply in all situations where there is an electromagnetic charge, also the ones in which we have previously not examined it.

Electromagnetism and Chemistry

Professor Emeritus from Stanford University, Dr. William A. Tiller, writes in his book “Science and Human Transformation: Subtle Energies, Intentionality and Consciousness”, that there is a crack in our world picture, as we in medicine and biology largely have viewed living organisms as operating via the following sequence of reactions:

\[
\text{function} \Leftrightarrow \text{structure} \Leftrightarrow \text{chemistry}
\]

(Tiller, 1997: 2)

This means that the function of a person, for example the ability to perform a certain task is connected with, thus both influencing and being influenced by, the structure of that being which again is in a mutually influential relationship with the chemistry of that person. And that’s it!

Within this paradigm of science, the deepest level, the essence, of any human being is thus found at the chemical level. Logically it thus becomes relevant to analyse the chemical reactions in a
human being in order to understand that being fully. This is for example the underlying thought amongst the people, and scientists, who try to understand the human being, including his functions, through the molecular biology of that person.

According to Tiller this equation needs to be expanded to the following form:

function ⇔ structure ⇔ chemistry ⇔ electromagnetic field
(Ibid: 3)

Here the previous equation remains, however, now the chemical level is no longer the foundation, because the equation is expanded to include the electromagnetic field as well.

As we have seen, this perspective is in accordance with the findings of Quantum Physics, where Stephen Hawking as previously stated, has said that electromagnetism is the foundation for chemistry and biology.

This does not rule out the value of research into the chemical domain of the human being in order to understand the functions of that being. It does, however, show that the electromagnetic field of a human being is the foundation for the other levels mentioned, and thus there exists the possibility that one may obtain even more accurate data from examining that level.

As for example Bruce Lipton has stated, the DNA is not, as supposed for a time, “read-only” – to use a computer term – but “read & write” and thus it does not offer the “ultimate” description of the human being, as it, the DNA, can be changed. (Lipton, 2010)

Thus there are scientists who state that the electromagnetic field of a human being goes to deeper levels of that being than the methods we normally use to describe it. Furthermore they state that this electromagnetic field is connected with both the function and the structure of a being, and thus it will be able to give a description of that being which goes to a deeper level, which again might give a more fulfilling description of that being.

In the following this theory of the human electromagnetic field will be examined in order to evaluate its practical application within the domain of Human Resource Management.
The Human Energy Field

For years scientists have been working with the energetic field of human beings, generally in order to diagnose, prevent or cure diseases\textsuperscript{18}. Although the scope of this assignment is to examine if, and in case how, the energetic field of a human being can be used to predict that person’s skills and competences, and thus as an recruitment tool, I shall use the scientific findings of some of the most famous\textsuperscript{19} scientists within this field, and try to apply their findings on the field of Human Resource Management.

Dr. Hiroshi Motoyama

Motoyama holds a Ph.D. in philosophy, one in medicine, and one in clinical psychology together with a degree in electro engineering. (Motoyama, 1978)

I have chosen to use him for this thesis, because of his extensive scientific work in scientifically measuring and analysing the energetic structure of the human being. His work is divided into two aspects, the measurement and analysis of meridians, and the measurement and analysis of energetic vortexes, known as chakras.

That work consists, amongst much else, of inventing and producing two electric devices for measuring the human energetic structure; one for the meridians, one for the chakras. (Ibid: 31) I shall in the following present his work regarding these two issues, in order thus to analyse, if they, or at least one of them, can be useful for the purpose of this assignment.


\textsuperscript{19} I have not chosen them because they are famous, but I hope that their fame is a reflection of the quality of their research.
The meridians

4500 years ago the Chinese postulated that a subtle system of life-sustaining energy circulates throughout the body. This energy is known as “ki”, and is supposed to be the “vital force” upon which physical life is dependent. (Motoyama, 1978: 99)

This system has been extensively investigated by western scientists, starting as early as 1937, when Sir Thomas Lewis described it, in the British Medical Journal, as ‘An Unknown Nervous System’. (Ibid: 99).

More recently Gilula (M.D.) & Beal (Electrical engineer) have drawn similar conclusions based on bioelectric investigations. (Ibid: 99)

According to this theory the universe is divided into two aspects, yin and yang; which is fundamentally the same as the western plus and minus from electromagnetism. (Ibid: 100)

The Chinese claim that an excess of one of these two forces, yin or yang, leads to disharmony. The excess of yin leads to one extreme of disharmonies, the excess of yang leads to the polar opposite extreme of disharmonies. (Ibid: 100)

This theory states that ‘biochemical processes are the interaction of the yin and yang aspects of ki energy.” (Ibid: 100)

The theory of the meridians is based on the empirical observation, that the impairment of a body organ or function leads to the fact, that a specific skin area becomes dysfunctional. (Ibid: 101)

Motoyama writes that:

Gradually it was recognized that these points follow an identical mapping in all individuals, and that the points connected to one type of organic function fall along a continuous line. These pathways of energy flow became known as ching, or meridians.”

(Ibid: 101)
As a result of these observations the Chinese developed acupuncture, which is the stimulation of the previously established energetic meridians through needles, thereby leading ki energy into an area which needs it, or by leading ki energy away from an area in which it is in excess, by which a healing effect was observed. (Ibid: 101)

Each meridian, of which there are 12 main ones, is named after the body function it controls, for example the heart meridian, the stomach meridian, etc. (Ibid: 104)

Motoyama investigated the existence of meridians through scientific studies, and he states that he has confirmed the existence of specific energetic charges in the areas in which the meridians were postulated to run, and that the energetic stimulation of one point of a specific meridian would lead to a changed energetic charge, yet only in the area postulated to correspond with that meridian, thus in his view confirming the existence of the meridians. (Ibid: 112)

Motoyama also investigated the difference in the energetic charge at the meridian points at the fingers of a person having a physical disharmony, and found that there was a difference of between 4-6 degrees Celsius.

According to Motoyama this confirms both the existence of the meridians and a bio-energetic polarity in the human being. (Ibid: 114)

As a conclusion to his work on meridians Motoyama developed an AMI machine – the Apparatus for Measuring the Function of the Meridians and Corresponding Internal Organs – which measures the skin current, and by making statistical data based on the measurements of 1.000s of subjects it can be used to determine which bioelectric interval indicates health and which disease. This machine is being widely used in the diagnosis and prediction of health problems; for example by the Bob Hope Parkinson Research Institute in Miami as well as by the Japanese government, etc. (Ibid: 119)

As this is not a medical thesis I shall not go further into the specifics of the meridians. What is interesting considering the scope of this thesis, is to examine the postulated energetic structure of the human being by this theory, in order to see if it can help to predict skills and competences which a human being possesses. I shall also not describe in detail the specific experiments
performed by Motoyama to investigate the possible existence of meridians, as it is not relevant for this thesis.

**Discussion of Motoyama’s findings regarding meridians**

This theory states, that the human being has certain energetic “channels”, which are not physical, but they can be measured due to their electric current. These channels can be stimulated and thus an effect upon the human being appears. This effect seems to be related to the health of that human being, and does not have much to do with the skills and competences which that person possesses.

I am in no way neglecting the importance of health, and the direct and indirect effects a company might suffer if its employees are not healthy, not to mention the individual loss of life quality due to the lack of health. Lazear & Gibbs (2009) also discusses this aspect in their book. That is just not the scope of this thesis.

The meridians, although important for the human being, do not seem to give any predictive power, which can be used within recruitment, except that they might be able to predict the state of health of that person.

**Part-conclusion**

In this part I have shown that the ancient Chinese claim of a subtle energetic system in the human being has been confirmed by modern science.

There are aspects of this system which could be profitable to investigate further, however, this system seems to be dealing exclusively with human health, and I see no great potential for transforming it into also dealing with human skills and competences.

Although human health is extremely important - and it seems likely that all companies want a healthy employee, in comparison with an unhealthy one - this theory does not have any predictive power regarding skills and competences of the human being.

Therefore I shall abandon this theory, as it does not serve the purpose of this thesis.

**The chakras**

According to the Tantra-Yoga philosophy developed around 6.000 years ago, the universe is created by Consciousness (Shiva) and Energy (Shakti), According to Professor Emeritus in
Quantum Physics, Dr. Amit Goswami, there is a clear connection between the findings of the Tantra-Yoga system and that of Quantum Physics, both express the same, just in different terminology. (Goswami, 1993)

According to these esoteric teachings the human being is composed of three distinct bodies; the physical, the astral, and the causal. Each of these bodies is acting as a vehicle relating to a corresponding dimension of energy and consciousness. (Motoyama, 1978: 81)

Both the physical and astral bodies are characterized by duality, having a polar (+/-) electrical charge. (Ibid: 82)

The human being has, according to this philosophy, seven energetic vortexes (chakras), which are not physical objects, but they exist at a higher energetic level. (Ibid: 84)

Each chakra has been described as having a certain resonance (frequency in the terminology of modern science) and thus qualities, and a projection in the physical body.

I shall here give a brief description of some of the characteristics, which are described as being connected with the chakras. This description will focus on the aspects, which I find most relevant in the context of being able to make an applicable performance prediction of a person within the domain of Human Resource Management.

In order to give a description of the chakras in a contemporary language I chose to supplement Motoyama’s description, taken from the classical texts, which are 1000s of years old, by the description given by Swami Mahasiddhananda, which he gives in his yoga course.

The chakras, from the lowest level of vibration to the highest, according to their projection in the physical body, are:
**Muladhara chakra**

This chakra is located at the base of the spine and from a psychological point of view it is connected with the most basic instinct of survival.

This energetic level is intimately connected with a state of fear, the preservation instinct, and the kind of mentality, which we define as the "jungle law".

At this level people are, excessively, concerned with the survival of the physical body, constantly alert not to be attacked by anybody. This can, in its extreme cases, manifest as paranoia. Thus they are also the people who take good care of themselves; getting enough – and very good – food and sufficient rest.

Muladhara chakra is connected with the “earth" element, thus people who have this energetic level well activated are known to be very grounded, with both legs solidly planted on the earth. This is also the level of material possessions and thus people with this energetic level strongly activated, are very attached to their material possessions and they are willing to do a lot of effort and sacrifices in order to obtain and preserve their material possessions.

Being the lowest level of energy, from this level people divide things into “pleasant” and “unpleasant”, and they only wish to do what they find pleasant. Furthermore they are very lazy to get started, but as this level is also the human “battery” they can, once started, continue much longer than other people, and thus tend to obtain their goals through perseverance.

Psychologically speaking people whose energy is predominantly at this level project all problems on other people, blaming them for whatever goes wrong in their own lives, constantly having a very defensive attitude.

People who are harmoniously activated at this level have a great self-confidence.

Should this energetic level be unbalanced, people manifest issues like: tiredness, poor sleep, lower back pain, constipation, depression, obesity or digestive problems, lack of grounded-ness, fear, rage and anger, low self esteem, exclusive focus on survival, obsession with comfort, alienation, possessiveness, etc.

A harmonious activation leads to the state of being grounded, centred, committed and independent, having energy and vitality, strength and stillness, etc.

(Swami Mahasiddhananda, 2012)

**Swadhishthana chakra**

The second centre is located about 3 centimetres above the sex and is connected with the “water” element.
This level is concerned not with the survival of the physical body but with that of the species and thus has a strong connection with the family.
From this level every person encountered is first of all seen as an object for sexual pleasure, and secondly as a colleague, friend, competitor, etc.
At this level people manifest eroticism strongly, and they are generally speaking very charismatic; with the ability to charm almost anybody they wish to.
At this level of energy people are more free, generally very social, enjoying to do pleasant things with their friends, and they tend to recover their energy faster thus having less need for sleep and rest.
At this level people are willing to work as long as it brings them pleasure yet the moment a task is no longer pleasant they are the first to say that “I quit!” or “I had enough!”
People with this energetic level predominantly activated are very creative, and they can find new and original solutions to almost any problem, however, their focus has a tendency to scatter and they need a strong leader who can keep them on track. If not, the project they work on will be presented to everybody in a very enthusiastic way, as something amazingly new and revolutionizing, and then, shortly after, fade away completely.
When this level is disharmoniously activated it leads to issues with: tiredness, irritability, shyness, guilt, blame, sexual obsession, money, lack of creativity, morality, jealousy, hatred, etc.
When it is harmoniously activated it manifests as: friendliness, vitality, sexuality, satisfaction, prosperity, creativity, humour, etc.
An example of a person with this level of energy predominantly activated is James Bond.
(Swami Mahasiddhananda, 2012)

**Manipura chakra**
The third chakra is located two centimetres below the belly button, and is generally said to be connected with the personality of the person.
It is connected with the “fire” element and people who have a predominant energetic activation at this level are said to have “fire in the belly”.
At this level people are generally known to have a great “appetite” for life and are very ambitious in everything they do, wishing to be the best.
They are constantly fighting with each other about who is the most powerful, the leader, and this fight can easily become disharmonious, leading to the destruction of the project, or company, they
fight over. If this level of energy is harmoniously activated they are able to put aside their personal disagreements and focus on the greater good of the whole and thus corporate.

Because of their inner “fire” these people have a tendency to “burn out” and need to be guided carefully - not like the people on Muladhara and Swadhisthana chakra, who need constantly to be reminded of the goal and motivated to go there - but to make sure that they take sufficient care of themselves, that they eat enough and take breaks from their work.

At this level of energy people constantly strive to expand and to improve which can be very good and help an organization to grow, however, they lack the ability to realize that after a process of expansion there needs to be a period of integrating the new into the old in order to make the whole harmonious. Instead they wish to expand constantly until the point where they can no longer control the expansion and everything collapses.

People with this level of energy well activated are very intelligent and capable, through logic, to reach a conclusion to most problems, fast and efficient.

A disharmonious activation of this level leads, amongst others, to: the lack of self-esteem, being timid, depression, issues with self-image and fear of rejection, inability to make decisions, judgmental, perfectionism, anger, hostility, etc.

A harmonious activation, on the other side, leads to: dynamic energy, confidence, logical intelligence, decisiveness, productiveness, good digestion, mental focus, responsibility, etc.

The example of a type of person with a strong activation of this level of energy is the samurai. (Swami Mahasiddhananda, 2012)

**Anahata chakra**

Located just above the diaphragm, it governs the heart and circulatory system.

This chakra is connected with the “air” element and known as the “heart” chakra.

At this level of energy is love and a person with a strong accumulation of energy at this level loves what he does; thus the saying “to put your heart into something”.

This is the emotional level where for example empathy is found and manifests.

At this level of vibration sensory-created distinctions and consequently egoistic desires are transcended, and thus, people are able to work together for obtaining the same goal.
A disharmonious activation of the energies at this level, meaning a unbalance between the plus and the minus aspect of the energy, leads, amongst others, to: problems with the heart, asthma, difficulty with love and dealing with affection to or from other beings, lack of hope, despair, moodiness, envy, fear, jealousy, anxiety, etc.

Whereas a harmonious activation of Anahata chakra manifests as: compassion, nobility, a feeling of completeness and wholeness, empathy, friendliness, optimism, motivation, non-violence, etc. Persons manifesting a strong energy at this level include Mahatma Gandhi, Mother Theresa, etc. (Swami Mahasiddhananda, 2012)

**Visuddha chakra**

This chakra is located at the centre of the throat and is connected with the “ether” element. This chakra governs, amongst others, the ability to communicate and people with an activation of this energetic level are very convincing in their communication, and can play with the words in a very impressive way.

It is also the level of true art, derived from the Greek word “*ars*” meaning to arrange something in a harmonious way, based on universal principles, such as for example the golden proportion, etc.

Disharmoniously activated this level leads to: problems with the throat, verbal dominance, manipulation of memories, inexpressiveness, metaphysical sadness, etc.

People with a strong activation at this level include Mozart, Beethoven, Munch, etc. (Swami Mahasiddhananda, 2012)

**Ajna chakra**

Is located at the centre of the forehead and, like Sahasrara chakra, it doesn't have an element connected with it.

It is known as the mental command centre and connected with inspiration, mental control, geniality, etc.

People with a strong activation at this level are the geniuses who were able to reveal universal principles to mankind.

In case of a disharmonious activation of this energetic level people manifest: dependency, indecisiveness, low intelligence, instability, inattentiveness, bad memory, lack of concentration, etc.
On the other hand does a harmonious activation lead to the following qualities: inventiveness, geniality, fast and controlled thoughts, the inclination towards philosophy, the capacity to synthesize large bodies of knowledge, a strong moral feeling based on universal principles, etc. People with a strong activation at this level include Goethe, Newton, Einstein, Bohr, etc. (Swami Mahasiddhananda, 2012)

**Sahasrara chakra**

This is the highest level of energy, physically located at the top of the head. This level is connected with the state of enlightenment, wisdom, Divine ecstasy, spiritual aspirations, etc.

A disharmonious activation leads to: unconsciousness, madness, paranoia, schizophrenia, coma and death.

A harmonious activation is connected with the following qualities: detachment, continuation, happiness, harmony, transcendence, etc.

The people generally considered to have a strong activation of this energetic level are, amongst others: Jesus, Buddha, etc. (Swami Mahasiddhananda, 2012)

It is the claim of the Tantra-Yoga system, that meditation (concentration) upon a specific chakra as well as the practice of certain asanas (body positions) can energize and thus activate a specific chakra. Motoyama states, that he has been able to prove this. (Ibid: 91)

Here we, from a Human Resource Management perspective, have a very interesting situation. If we, for the sake of argument, assume that the energetic structure of the human being, which determines skills and competences in the individual human being, which the Tantra-Yoga system proposes, is – more or less - correct, and that, as Motoyama states to have proven, this energetic structure can be transformed, through appropriate techniques, then it becomes possible to transform and expand the qualities which a human being possesses, and thus evolution, and Human Resource Development, becomes a conscious choice.

Once again further scientific studies need to be conducted to clarify this situation.

Motoyama developed a machine, known as the chakra machine, which he states can measure the frequency and amplitude of the energy transmitted from a specific chakra.
He states to have proven that both frequency and amplitude would change as a result of focusing upon the area described as being the physical projection of that chakra. (Ibid: 95) This means that the energetic structure of the chakra can be changed, and thus, if there are certain skills and competences connected with that level of energy, they might change as well.

**Discussion of Motoyama’s findings regarding chakras**

What I have focused on here, is the fact that this system states that everything in the universe consists of energy, that this energy manifests at seven different levels (domains of frequencies – in modern terminology) which each have a “subtle” connection in each human being. This “subtle” connection is referred to as an energetic vortex, or, in Sanskrit, “Chakra”.

Each chakra covers a specific range of frequencies and amplitudes, and the theory states that the activation of a specific frequency of energy in the human being provides that person with certain skills and competences.

For example a person who has the lowest level of energy, Muladhara, activated, shows a more stable, grounded behaviour, whereas a person who has the third level of energy, Manipura, activated, will show a very dynamic, active behaviour and both would need to be managed, and motivated, in different ways.

There is listed a series of qualities which presumably are connected with each level of energy (chakra) and these qualities seem to have a connection with both human psychological and physiologic qualities, and thus could be relevant for choosing a person for a specific function in a company.

It is stated in the Tantra-Yoga theory, that all human beings have the seven chakras, yet the dominance of each specific chakra comes from its energetic activation, meaning how much energy is accumulated within the frequency of that chakra.

Based on this, this system states that the differences between human beings are based on how much energy each individual has within the different frequencies, which the “chakras” represent. Thus this theory, should it be valid, may also find application within the domain of Human Resource Development.

This activation of the chakras is not, only, determined by external or congenital factors, but it may be influenced by the practice of specific techniques, in Tantra-Yoga known as asanas or
meditation – in contemporary “business” language these techniques are collected under the term “Mindfulness”. (Lorenzen, 2010)

Logically it seems that, since everything in the universe consists of energy, any activity whatsoever will give an activation of one or more levels of frequency.

The theory appears relatively deterministic, as it seems to state, that two people will show similar qualities if they have the same energetic frequencies activated to the same extent. This statement could be examined by empirical studies, which I shall not conduct within the scope of this thesis, because of the required technical resources.

From a Human Resource perspective this theory can, assuming that the empirical observations support the theoretical foundation, help to predict the individual characteristics of a candidate. For some jobs certain qualities might prove useful; for example a company might find that a salesperson with charisma and social skills is more successful than one without these qualities. If it is possible to discover before signing the employment contract, in a scientific, mathematical way, which frequency of energy manifests as for example charisma, it should be possible to predict which person possesses most of this quality and then to hire him. This possibly becomes much more relevant the higher in the organizational hierarchy a person moves, assuming that the senior management should possess a wide range of qualities and that a single “defect” in a high level executive has consequences all the way down the organization. For example one might imagine that a Senior Executive who lacks the ability to empathize with his subordinates could cause certain problems which would affect a lot of people due to his interaction with many people throughout the organization, whereas a person with the same defect, yet at a lower organizational level, might not interact with as many people and thus not create as big problems.

Part-conclusion

The Tantra-Yoga philosophy states that the human being consists of energy, which is divided into seven levels depending upon its frequency. Some people have more energy at a specific level, others less, however, everybody can accumulate more energy through the practice of adequate techniques.
Each level of energy is said to represent certain human skills and competences, such as endurance, charisma, the desire for power, love, etc. Motoyama states that it is scientifically proven, that we can measure these levels of energy, their frequency and amplitude, in the human being. Thus there is a theoretical possibility that by developing this theory to fit with the requirements of Human Resource Management, it can provide us with a, possibly at first rough, energetic profile of the human being, thereby becoming an objective tool which can help us in the selection of an individual in the recruitment and selection process.

**Professor Emeritus, Dr. Valerie V. Hunt, UCLA**

Hunt has pioneered the work of energetic fields within the domain of health. Her work includes, amongst much else, the scientific measurement of the electromagnetic field, which surrounds human beings.

She has furthermore developed a device, which she states measures this electromagnetic field of the human being.

I will use Dr. Hunt’s research in the analysis of the human electromagnetic field.

**The electromagnetic energy field**

According to Hunt the human body consists of cells which all contain tiny electrical elements. She states also to have established a scientific connection between the electrical charge of a human being and the behaviour of that being. (Hunt, 1996: 11)

Using different electronic equipment, amongst others electromyogram (EMG), electrocardiogram (EKG), electroencephalogram (EEG), telemetry systems used by NASA to monitor their astronauts while in space, etc., she states that she has succeeded in measuring the small, continuous millivoltage (one thousandth of a volt) signal from the body surface. (Ibid: 18) Hunt states that brain waves have a slow waveform, from 0 to 20 cycles per second. The heart creates a larger and faster wave up to about 225 cycles per second. The muscles have a cycle range from 0 to 250, depending on the muscle group. (Ibid: 19)
In the human body there are two primary electrical systems. The well-known alternating electric current of the nervous system, the brain, neurons, and the nerves, which causes muscle contraction, nerve transmission, glandular secretion, and sensation. The other is a newly discovered electromagnetic system probably emanating from atoms and cells. (Ibid: 20) This second electrical system can, at least to a certain extent, can be detected with special electronic instruments.

So beyond the electrical frequencies of muscles, brain, and heart there is another field of energy, smaller in amplitude and higher in frequency. This electromagnetic energy is 8-10 times faster than other biological electricity sampled from the body's surface, and about one-half to one-third as strong as the millivoltage of a resting muscle.(Ibid: 21)

Hunt states that her laboratory at UCLA was the first to study these “extremely high biological frequency” (EHF) electrical currents, which she connected with mind phenomena and human consciousness.

Hunt states to have proven, that each individual has a unique pattern of amplitudes and frequencies, and although these frequencies can change, each individual keeps his or her unique pattern, such as its strength or weakness and its variable frequency over time. (Ibid: 23)

Hunt also states to have established a connection between the profession of a person and the energetic structure of that person. (Ibid: 23)

Hunt’s research also led her to conclude that some people have a field, which is more expanded, showing more variation in frequencies, than others. (Ibid: 23)

She also states to have proven, that there is a difference in the electromagnetic field between men and women. (Ibid: 24)

She was, according to herself, also able to prove that ordinary activities, like swimming or walking barefoot on grass influenced a person’s electromagnetic field, as did the location of the individual. She states that a person’s field would expand near the sea or in the mountains. (Ibid: 25)
Another interesting aspect is that Hunt also experimented with the effects of the connection of the fields between two people. She states that she discovered, that in some cases the field of one of the people would completely absorb and dominate the other field, in other cases both fields would reject each other, and in some cases both fields would change and become identical yet qualitatively more elaborate than either person's field prior to that interaction. (Hunt: 26)

I chose to include this specific finding because it can possibly be developed further in explaining why some people cooperate very well together, while others cooperate very badly together, with any possibility in between.

If it can be scientifically tested if people can work together well with the others in the department a lot of problems can be avoided in the first place when putting a team together.

The scientific background for this finding could be the constructive and/or destructive interference, which has been discussed in the part about electromagnetism.

Finally Hunt states to have discovered that the electromagnetic field of the person was being influenced by the electromagnetic field, which surrounded him or her, and that this affected the performance of the individual.

This could both be in a negative and in a positive way, meaning that some electromagnetic fields helped to make a person stronger and more enduring, whereas others diminished his powers. (Hunt: 28)

**Discussion of Hunt's findings**

This part has shown that Hunt's research shows that the energetic charge of a person, which can be measured, influences that person's behaviour, which, from a HRM perspective means, that it is possible to measure how a given person will behave in a specific situation.

These findings state, that each individual has his own specific pattern of frequencies. Theoretically this can be used to predict the individual characteristics of that person, given that empirical studies can determine which frequencies lead to which characteristics.

The fact that people within a specific profession have the same activation of certain frequencies might be used to predict which frequencies give which qualities.
It might though be found empirically, that the choice of entering into a specific profession was taken during much earlier stages of life, so that all the people who have the specific frequencies of a profession have already chosen to enter that profession. Thus the people who apply for a specific position are the ones who, more or less, qualify for this position. If this is true, then the predictive power of this aspect of the theory doesn’t help much in a recruitment situation, yet it might find use in other domains, for example could it be useful in helping teenagers in choosing the career which fits them the best, which might be economically beneficial for the whole of society.

Hunt’s finding that some people have an electromagnetic field, which is more expanded than others, can indicate that those people possess other qualities than those with a more contracted electromagnetic field. It does not tell us if those qualities are good or bad, useful or destructive. It could be that a generalist had a very expanded electromagnetic field, and an expert a narrower electromagnetic field. It will require further empirical studies to clarify this.

The fact that empirical studies show that there is a difference in the electromagnetic field between men and women, might mean that each gender is naturally endowed with certain qualities. Once again further empirical studies will be needed before it will become possible to make any conclusions about this.

A very interesting element is represented by Hunt’s findings regarding the "interaction" between two electromagnetic fields. The fact that some fields absorb and dominate other fields while other fields refuse each other and yet other fields merge at a higher level of frequency than each of them individually could be used as a tool to predict the corporation between different individuals who have, or are supposed, to work together. Further empirical studies are needed in order to clarify if two people whose fields completely refuse each other might work very bad together with each other, whereas two people whose fields merge completely have a very constructive and efficient teamwork. If a company considers teamwork important and works with more or less stable teams, these findings could provide the theoretical foundation for an empirical study upon the connection between differences in the fields of the individuals and their ability to work together.
I shall, very briefly, touch Hunt's findings about the fact that the external electromagnetic field influences the electromagnetic field of the individual and thus his performance. In a world where we are constantly surrounded by electromagnetic fields, mobile phones, computers, light, etc., there could be a negative, or positive, influence upon the performance of the employees based on the electromagnetic field where they work.

HR professionals might add value to the company by studying the effects of the electromagnetic fields, which are present in the work area, upon the productivity of the employees, and perhaps in this way help improve performance. The work of, for example, Dr. Robert O. Becker (1985), also suggests this.

Part-conclusion

In this part I have shown that, According to Hunt, each person has an individual electromagnetic field of energy at a relatively high frequency, which surrounds him or her.

This electromagnetic energy field influences the skills and competences of a person and is in connection with that person's profession.

This electromagnetic energy field might be used to make certain predictions about an individual which would prove useful in a recruitment and selection context, however, before any such predictions can be made, further empirical studies are needed to clarify these findings.
Part 4: Employee evaluation

Having previously clarified that employees are – or at least can be - important assets for a company, and that there seems to be scientific theories supporting the possibility of making an energetic profile of each employee which might reveal that person’s skills and competences, the next step is being able to understand that energetic profile.

Stating, for example, that a given employee has x amount of energy within the frequency of x-y Hertz with an amplitude of z does not reveal much about that person’s skills and competences.

The final test, in order to be able to conclude if the theory of the human energetic profile can add value to the Human Resource Management field is to analyse which performance predictions it delivers.

One way of analysing this could be through superimposing the theory of the energetic profiles with an already accepted performance evaluation tool. Thus it should become possible to see if there is any statistical relationship between a given energetic profile and specific skills and competences.

For this analysis I chose to examine if the 360 degree feedback is applicable. The reason I did this is because it is my professional experience that this tool is widely used and it includes more elements, than for example just the evaluation from the direct superior or that of KPI; therefore, theoretically speaking it should give a larger basis for making statistical predictions.

For this analysis I shall apply the 360 degree feedback presented by Edwards and Ewen, with critical comments based on the work of Hensel et al.

The 360 degree feedback

According to Edwards and Ewen the 360 degree feedback is a registered trademark belonging to TEAMS, Inc. and it has been developed as a new model for feedback and evaluation of performance.

The point of the 360 degree feedback is, as the name indicates, to give a “complete” feedback, one that encircles the employee who receives it 360 degrees.
Edwards and Ewen continue that the “classic” employee evaluation is based on the judgment of one person, the manager (1996: 4)

They state that this can have many unwanted consequences, for example that certain people do not want to take management positions because they don’t want the task of ‘playing God’ (Ibid: 6), but more importantly, such a feedback can be very biased by the personal opinion of the manager. This bias can, theoretically speaking, benefit the company as it might be imagined that a manager sees a certain potential in an employee and gives that person the opportunity to develop. It can also be that a manager gives a better feedback to a person because of personal preferences or similarities, which have nothing to do with that person’s ability to perform the task, and thus be valuable for the company. (Ibid: 6)

The 360 degree feedback, Edwards and Ewen state, serves the interests of the employees much better than other kinds of evaluation, such as the traditional hierarchical feedback, or management by objectives, or simply by results, because it is able to integrate all these individual criteria into a single evaluation. (Ibid: 5)

That seems to be a benefit of the 360 degree feedback as we, for example, can imagine that the manager of the employee being evaluated could be more focused on the pursuance of certain objectives by the employee which have previously been established, whereas the manager of that manager could be more interested in the bottom line financial results, and that the colleagues are focused on having a colleague who takes the time to help them when needed.

Thus it seems logic to conclude that the 360 degree feedback potentially offers a more “objective” evaluation than a single feedback.

There is a quote attributed to Bill Hewlett saying that ‘What you measure is what you get!’ If that is true then if a company only measures the financial results of an employee, then that employee will spend all his or her energy on delivering exactly that, which might lead to agent behaviour, which might not be in the best interest of the firm. (Likierman, 2009: 100)

An example Likierman gives, is with a law firm, which got discredited in public because it only measured and evaluated its lawyers on the hours billed to clients. This led to a behaviour where its senior lawyers did work which could have been done by more junior, and thus cheaper, colleagues, offering a more expensive service to the clients of the firm.
Edwards and Ewen continue by stating that there seems to be a general tendency, possibly due to the fact that communication has become cheaper and easier, that each manager is responsible for more employees and thus has less time and interaction with each individual employee. This aspect also makes it more “objectively” if not inter-subjectively, correct to apply the 360 degree feedback, as the employees is then evaluated by people with whom he interacts daily and who thus see his or her general behaviour.

A further element which seems to be in the favour of the 360 degree feedback is that, according to Grant, there seems to be a tendency that the people whom he defines as “takers” are the ones who often create problems for the organisation in which they are, and that these people have a tendency to “kiss up and kick down”. Thus a feedback also from their subordinates will give a more correct picture of them, and possibly save the company for a lot of problems. (Grant, 2014)

It needs to be emphasized, continues Edwards & Ewen, that the 360 degree feedback is a supplement to, not a substitute for the traditional manager/employee feedback. It can, for example, be used as it seems to be the practice at Citibank (HBR: Citibank: Performance Evaluation), as a reference, which the manager can use in the final evaluation of an employee and possibly for the manager to become aware of qualities which the employee possesses which the manager, possibly due to the reasons previously discussed, was not aware of.

An important issue to clarify is how many stakeholders should be included in the feedback. Ideally speaking, continues Edwards & Ewen, should anybody that person has worked with give a feedback, however, this might not be realistic, because it would require an enormous amount of work – look for example at The Lincoln Electric Company, where the managers spend around 5-6 weeks a year on employee evaluation, which is a huge investment of time and money. (Case: Lincoln Electric Company)

One could also imagine, that if too many people give a feedback to a person they have not interacted enough with to get a realistic impression of, they could rate him average and if sufficiently many people do that even the high performers could, statistically speaking, end up with an average evaluation.
According to Edwards & Ewen the employee himself, colleagues, external customers, the direct manager, employees from other departments, employees from his own department as well as internal customers should be included in the 360 degree feedback.

As my point is not to criticize nor evaluate the practical implication of the 360 degree feedback, I state that, for the purpose in mind, the 360 degree feedback, in its most expanded version, with a feedback from every stakeholder the employee has been in work related contact with, gives the best feedback for creating an evaluation which can be used to rate the employee as objectively as possible, and thus create the empirical foundation for predicting which energetic profiles are good at which tasks.

It needs to be taken into consideration that the 360 feedback has a risk of being “gambled”, meaning that some people make agreements with their friends among their colleagues to rate each other higher in order to appear better. (Edwards & Ewen, 1996: 54)

For this reason, the inventors of the 360 degree feedback have developed certain statistical criteria for ensuring the objective validity of the 360 degree feedback. Amongst these are that the people who give the ratings have to be 100% sure that their ratings are anonymous; that minimum 75% of the people selected to give a feedback due to their work relations with the person receiving the feedback do so; and that the answers which deviate more than 40% from consensus should not surpass 5%. (Ibid: 61)

In this way it is ensured that the objectivity (I emphasize that I am fully aware that from a philosophical point of view it cannot be argued that the result is objective) of the results is valid, according to Edwards and Ewen.

As I am not convinced about the statistically validity of Edwards & Ewen's statements I chose to include Hensel et al.

In their article "360 degree feedback: how many raters are needed for reliable ratings on the capacity to develop competences, with personal qualities as developmental goals?" Hensel et al. states, that the general number of peer raters in the 360 degree feedback is too low and thus does not reach the satisfactory level of reliability, which according to Nunnally is 0.7. (Hensel et al., 2010)
According to their research the reliability of the 360 degree feedback ratings is in general 0.14 between managers and subordinates, and 0.34 between supervisors and peers. This is clearly – far – below the required 0.7, which is needed for a reliable feedback.

According to their findings within the development of competences the feedback accuracy based on the number of raters is:

<table>
<thead>
<tr>
<th>Raters</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>0.45</td>
<td>0.50</td>
<td>0.54</td>
<td>0.60</td>
<td>0.63</td>
<td>0.65</td>
<td>0.67</td>
<td>0.69</td>
<td>0.70</td>
<td>0.72</td>
</tr>
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(Ibid: 2818)

Thus it is necessary to have 10 raters in order to obtain a statistically reliable feedback.

Hensel et al. concludes that ‘The use of 10 raters for a reliable 360 degree peer assessment and development system for competence development does not seem realistic in the daily practice of the work flow.’ (Ibid: 2825)

For the scope of this assignment however, it seems to be possible to create a statistically reliable evaluation of a person and his skills and competences. The requirement is that minimum 10 raters are involved in giving the feedback.

**Criticism of the 360 degree feedback**

One may argue that the 360 feedback includes too many aspects in the evaluation of each individual and that using for example Key Performance Indicators would provide a more applicable evaluation, based on fewer parameters though. Like how performance evaluation is performed at A.P. Møller – Mærsk. (Case: Harvard Business School, 2012)

Personally I agree with this argument, from a purely pragmatic point of view of practical implementation in a company.

The reason why I chose the 360 degree feedback is because this is a scientific research and I see no reason why not to examine the proposed idea in as much detail as possible.
**Part-conclusion**

In this part I have shown that the 360 degree feedback can be used to give a statistically reliable feedback of the skills and competences of a person if and only if, enough people (10) are included in the rating, and the rating is kept anonymous.

Thus it can be concluded, that for the scope of this thesis, it can be a valid tool.
Summary of the thesis

Here I shall give a brief summary of the findings of this thesis.

First I have analysed and, based on the HRM literature, established the importance for a company to have the right people, meaning the people who can help it obtain its strategic goals.

Then I have shown that the recruitment process does not, with 100% accuracy, lead to the recruitment, selection and on-boarding of the right people and that there is a certain financial gain, both for the company and for society as a whole, to be obtained from any recruitment and selection tool which can help in making the performance prediction better.

Then I have analysed, and concluded, that the present performance prediction tools might not include all levels of the human being, as, logically speaking, performance indicators based on past achievements do not give valid indicators about future performance and that even the neuroscientific recruitment tools do not cover all parts of the human being.

Then I have investigated the structure of the universe and the principles, which govern it, and I analysed how this reflects in the human being. Based on the scientific research into this area I have concluded that there are academics who state, that predictions can be made about a human being’s skills and competences based on his electromagnetic field.

Then I have investigated, and concluded, that there is a theoretical framework for superimposing this electromagnetic profile of the employee with, for example, the performance evaluation obtained through the 360 degree feedback, and thus there is a theoretical possibility to see which energetic profiles are good for each task and thus use the energetic profile of a human being as a performance prediction tool in recruitment and selection situations.
Part 5: Conclusion & Perspectivation

I shall start this part by repeating the problem statement I have worked with throughout this thesis.

Problem statement

Is it possible to make an HRM performance prediction tool based on the universal principles revealed by Quantum Physics, which can be used within the HRM recruitment and selection process?

Including:

1. Is there any HRM need for such a tool?
2. Is there any need for improving the recruitment and selection process?
3. Are there any financial benefits to be obtained through such a tool?
4. Might such a tool provide us with predictive powers, which cannot be obtained in other ways, for example through neuroscience?
5. How can such a tool possibly be applied within HRM to give predictions about performance?

Conclusion

In this thesis I have shown that, yes, it is possible to make an HRM performance prediction tool based on the universal principles revealed by Quantum Physics, which can be used within the HRM recruitment and selection process.

Scientists such as Hunt and Motoyama have already done the work proving that the energetic structure of the human being can be measured and used to predict skills and competences about that person. And yes, this tool can be used within the HRM recruitment and selection process as it can be used to predict skills and competences about a person before that person is hired, and thus help to choose the correct candidate.

To answer the five sub-questions:

1. Is there any HRM need for such a tool?
   • As I have shown is a company, which operates in a competitive environment dependent, amongst others, on competent employees, which can implement the
company’s strategy into operational results. So yes, there is an HRM need for a tool, which can help predict the candidates with the skills, and competences which the company requires.

2. Is there any need for improving the recruitment and selection process?
   • I have shown that the recruitment process, as presented by Lazear & Gibbs, is not optimal, as the results of their recruitment and selection process is, statistically speaking, shown not to provide the recruiting company with a 100% accuracy between the candidate and the job role that person is hired to perform. Therefore such a tool can be a supplement to the other tools used to predict the right candidate for the job.

3. Are there any financial benefits to be obtained through such a tool?
   • According to Hunter & Hunter there are very big financial benefits to be obtained from any tool which can make the highest performing people take the roles in which their performance matters the most, so yes, there are financial benefits to be obtained through such a tool.

4. Will such a tool provide us with predictive powers, which cannot be obtained in other ways, for example through neuroscience?
   • As I have shown has it been proven, even mathematically, that the human being is not only his brain processes, and thus such a tool might have predictive powers, which cannot be found through applying neuroscience. This doesn't necessarily mean that this tool can substitute the neuroscientific performance prediction tools, but that perhaps they can supplement each other.

5. How can such a tool possibly be applied within HRM to give predictions about performance?
   • I have shown that, at least one way of applying such a tool, can be through combining it with the 360 degree feedback, because we, from doing so, can predict which energetic profiles (aka. human beings) perform well in which tasks and thus whom to choose in a recruitment and selection situation.
Deliberation on differences to other similar surveys

There are many different theories, which try to predict a candidate’s job-fit based on certain criteria. Some of these theories have been described here, for example BrainPerform, Hunter & Hunter’s academic work, Lazear & Gibbs’s academic work, etc.

The similarity between this thesis and their work is the attempt to predict skills and competences, which are relevant to know in advance in a recruitment and selection situation.

The difference is that the previously mentioned theories try to make these predictions based on past achievements of the candidates. This approach, as I have stated, is invalid from a logic point of view, as there is no way that we logically can conclude future outcomes based on past events.

This thesis approaches the problem from a perspective based on universal principles revealed by Quantum Physics. That means that it attempts to go to the most fundamental level of the candidate that it tries to make predictions about - the fact that this person consists of energy – and then examine if this level can be used as a foundation for predicting skills and competences.

There seems to be a basis to continue working on, yet only future research will reveal if its findings can be applied at a practical level.

Perspectivation

When I got the idea of examining the principles of the universe in connection with Human Resource Management, and thus to create an energetic profile of the human being to help predict his skills and competences, I felt on very “thin ice”. I had no idea if there was any way of applying this theory in practice; not even if it was scientifically possible to make the measurements I envisioned. And even if it was possible to make these measurements would there be anybody within the HRM domain who would be interested in applying it in practice.

Fortunately it seems all my concerns were in vain.

The first professor I told about my project liked the idea and offered me the opportunity to write a Ph.D. at her faculty.

Exactly now Professor Korotkov has launched a portable device for analysing the human energetic profile based on measuring the photon and electron emissions from a human being, which makes the measurements a lot easier to conduct than by using Motoyamas way, which requires an entire energy shielded room.
My "fear" that the concept of the energetic profile of a human being would be considered too "esoteric" by the managers has also disappeared, as the majority of the people I have presented this idea to are very open towards it; some because they hold a degree in engineering and frequencies and amplitudes are somehow their "language" and others because they understand that this is a way to make quantitative comparisons between people based on mathematical calculations.

The areas in which these managers have asked for this theory to be implemented exceed all that I have ever imagined. Some would like to measure the energetic profile amongst their top executives in order to keep track of if somebody is about to "burn out". Others would like to have their employees tested regularly in order to discover and prevent people from going down with stress. Some want their most successful salespeople tested in order to see which similarities they have and thus use that knowledge in recruitment situations. Others, who have discovered that it is not always the person who is the best from a technical perspective who is also the best manager, would like to explore which energetic structure is the best for different management roles, in order to promote the right person. Again there are others who want to use this theory to discover which skills and competences certain of their employees/managers need to assimilate to become even more successful. And some who want to use this theory to know in advance if certain people can work together. Etc. Etc.

200 years ago science considered that all there existed was the physical world, which we could perceive with our five senses. Today almost all people, at least in the industrialized countries, use a wide range of tools which are based on forces we can not perceive with our five senses; computers, watches, mobile phones, TV sets, etc. All of which work based on one of the universal principles, namely electromagnetism; and apparently so do we human beings.

Therefore it seems to be only a matter of time before the concept of an energetic profile is fully accepted, not just within medicine where it is already well on the way, but also within biology, sociology, psychology and perhaps even Human Resource Management.
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**Part 7: Bibliography**


Exam paper for “Neuroeconomics”
Name: Andronicus Michael Torp
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Exam period: 20th of November 2013 - Wednesday 4th of December 2013
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I am an Certified IBM Recruitment Specialist and my purpose of attending this course is to discover if, and how, neuroeconomics, as a science, can help improve the recruitment process, both in the perspective on how the people who take the decision on whom to hire, the recruiters, think and act, as revealed by neuroeconomics, and if that is in correspondence with how the economic theory prescribes that a recruitment decision should be, and also, if there are factors which neuroscience reveals as having an impact on the decision making process which have so far not been included in the recruitment and selection process.

I will subdivide this assignment into 3 parts; In the first I will discuss Bernheim’s article “The Psychology and Neurobiology of Judgment and Decision Making: What’s in it for Economists” from the point of view, that economic decision making is not exclusively macro-economic consumer behaviour, but that there, apparently unlike what some neuroeconomists consider, is a “market” in which a “micro-micro” knowledge of decision making is very valuable.

In the second part I will discuss the findings of neuroeconomics regarding decision making in recruitment processes in relation to the “normative” approach which is given by Lazear and Gibbs in the book “Personnel Economics in Practice” which is the theory thought to the Human Resource Management students at Copenhagen Business School regarding recruitment and selection.

Finally, in the third part, I will compare the actual recruitment process, as it has been taught to me by IBM, with the findings of Neuroscience, to see if, and how, the recruitment process can be optimized according to the standards which IBM intends to live up to, that is, to offer everybody an equal chance based on personal qualifications, regardless of demographic factors, such as sex, age, political and religious believes etc.
My approach to this assignment is pragmatic; I would like to offer my, small, contribution, on how to make the recruitment and selection process better and more objectively fair.

Problem definition
How can the knowledge about the decision making process help make the recruitment and selection process more in alignment with the financial interest of the hiring company and more objectively fair for the candidates?

Part 1: The “micro-micro” of economic decision making
In his article “The Psychology and Neurobiology of Judgment and Decision Making: What’s in it for Economists?” Bernheim states that his purpose “… is to evaluate its [neuroscience] potential contributions to economics”.

Apparently “traditional” micro-economists are not convinced that neuroscience actually can or will help to improve their decision making theories as it, for them, is not important to know exactly whom will “buy a liter of milk” (Bernheim: 120) if they can just have a statistic predicting how many of the total number will buy and how many will not.

When operating at the Macro-economic level, the conviction of neuroeconomists “that a better understanding of how decisions are made will lead to better predictions concerning which alternative are chose …” is greeted with skepticism (Bernheim: 116).

Although I find it very interesting, I will not go further into the mathematics of the argumentations, because it doesn’t further the scope of this assignment, to prove that in fact there are situations in which the decisions of a single person, for example a high ranking senior executive or a recruiter has a significance.

Bernheim argues that the economists have demurred the highly predictive 1-to-1 prediction variables, because “… such predictions are of no value to them.”
(Bernheim: 120). My argument is, that for example amongst Senior executives, or the recruiter who hires them, this kind of data can be of extreme importance, and that this is the reason, just to give an example, why neuroscientists have developed recruitment tools, such as BrainPerform\textsuperscript{20}, to help give a 1-to-1 prediction factor.

My claim is, that the challenge economists have set the neuroscientists: "Provide an example of a novel economic model derived originally from neuroeconomic research that improves our measurement of the causal relationship between a standard exogenous environmental condition – one with which economists have been historically concerned – and a standard economic choice." (Bernheim: 123) can be fulfilled within the domain of recruitment process, and possibly also other domains.

Conclusion for Part 1
In this part I have showed that there are domains within the traditional economical decision making, which will benefit from the 1-to-1 data which neuroscience is able to provide.

Part 2.1: The “normative” recruitment process
I have chosen the book “Personnel Economics in Practice” by Lazear & Gibbs (2009) to represent the normative economical approach to the recruitment process, as it is the recruitment and selection theory which is taught to the Human Resource Students at Copenhagen Business School, and thus must be assumed to have an impact, at least on the future recruitment process in Denmark. Holding a degree in Business Administration and Philosophy, I am fully aware that the decision to use this theory is not beyond objective criticism.

Regarding the recruitment process Lazear& Gibbs claims that"... the firm should hire the riskier worker.” (Lazear& Gibbs, 2009: 4)

\textsuperscript{20} www.BrainPerform.ro
They give an example with an investment bank, which has to choose between two candidates to fill a position. Gupta, who has the standard background of most of the applicants, and Svensen, who has a very unusual background compared to other candidates (Lazear & Gibbs, 2009: 3)

Gupta’s productivity is extremely predictable and he will produce £200,000 of value per year. Svensen’s success, on the other side, is much less predictable and she may turn out to be a great success, producing £500,000 per year, or she may turn out to be a disaster and loose £100,000 per year, the odds for either outcome is evaluated with 50% in her case. (Lazear & Gibbs, 2009: 3)

Thus the expected output from either candidate is exactly the same: £200,000.

Now, considering that the costs of each candidate are the same, which is the better hire?

“The answer might seem counterintuitive, but usually the firm should hire the riskier worker.” (Lazear & Gibbs, 2009: 4)

The logic behind this is, that in case Svensen turns out to be a success the firm will, over a 10 year period, have an expected net of £1.9 M from her, if she is a failure the firm can terminate her contract after 1 year, with a net loss of £200 K (wage plus loss of production) whereas Gupta’s net profit will be £1 M.

Thus, the expected net profit from hiring Svensen is almost twice of that of Gupta! (Lazear & Gibbs, 2009: 5)21

Conclusion Part 2.1:

21 I have not included all of the mathematics presented by Lazear & Gibbs in my example, as I am stating a point, and not trying to prove why that point is how it is.
In this part I have shown, that according to the normative economical theory, one should hire the riskier worker.

Part 2.2: Risk vs. uncertainty
In this part I will analyse what neuroscience teaches us about decision making, in relation to the recruitment process.

Already here I have, due to the limitations set by CBS, to take a difficult decision (which could be the topic of analysis for the rest of this assignment – but will not) regarding which theory to use. According to Fox & Poldrack a decision taken under uncertainty is a decision in which the probabilities are not given, and the decision maker must assess the probabilities of potential outcomes with some degree of vagueness (Glimcher et al. 2009: 146) whereas risk means that the decision maker with certainty knows the probability distribution of possible outcomes (ibid: 145).

In a recruitment decision we never know with certainty the probability distribution of possible outcomes. The average success rate in recruitments is around 50%, and even top executive recruiters, who have more time and resources than the normal recruiter, only have a success rate around 75% (LinkedIn article: Success in Recruitment, accessed on 20\textsuperscript{th} of June 2013)

However, another perspective is that “Pure risk is a situation where probabilities are known, either because they are given or because the agent has gone through lengthy training.” (Glimcher et al., 2009: 358)

As the recruiter has received an intensive training, and thus must be considered an expert in his/her field, I will perform what in Quantum Physics is known as a “renormalization process” (Haramein, 2011), and, in the case of recruitment, consider risk and uncertainty as being the same.

Part 2.3: Decision making under uncertainty
According to the classic decision making theory “decision makers ought to choose the option that offers the highest expected value”. (Glimcher et al., 2009: 146)

However, that theory does not give a reasonable prediction of peoples actual decisions, and thus the theory has been modified by Bernoulli, in whose theory “decision makers choose the option with highest expected utility (EU): $EU = pu(x)$.” (Glimcher et al., 2009: 146)

The graph of the expected utility function is concave, $u''(x) < 0$, which implies that the utility gained by receiving $50$ is more than half the utility gained by receiving $100$, and therefore a decision maker with such a utility function should prefer $50$ for sure to a 0,5 probability of receiving $100$ (see Figure 11.1b). (Glimcher et al., 2009: 147)

From the perspective of decision making in the recruitment process, this might have an implication, which the recruiting company needs to be aware of, in order to ensure that the recruiter takes decisions in accordance with the preferences of the company.

If, in the example given by Lazear and Gibbs, Svensen’s output of £500.000 with probability 0,5 is better than, but NOT $2\frac{1}{2}$ times better than Guptas output of £200.000 AND the value assigned to Svensen is not representative of her Expected Utility, then the company risks that the recruiter takes a decision which is not in the best financial interest of the company.

These findings can have a significant impact on the final decision of which candidate to hire, especially if the decision maker makes “mistakes” in his/her reasoning; her I refer to the possibility that the recruiter could “engage in the following mental transformations:

- **1. Combination**
- **2. Segregation**
- **3. Cancellation**
4. **Rounding**

5. **Transparent dominance**” (Glimcher et al., 2009: 151)

By which there is a possibility that the value function of Svensen is combined to, for example, (£500.000 *0,5 + -£100.000 * 0,5=) £400.000 * 0,5 which is the same as Guptas value function of £200.000, just that his value function is sure, and then the recruiter might consider it the better choice to choose Gupta over Svensen, in which case the significantly higher expected net profit from Svensen is lost.

In the case given by Lazaer and Gibbs, it seems that the extra gain from Svensen is so much bigger than the gain from Gupta, that the recruiter would, based on the findings of neuroeconomics, hire Svensen. However, if Svensen’s production had only been £300.000 per year, the recruiter would not have had an expected gain twice as big and might not have taken the decision in the best financial interest of the company.

Another issue arises, if we allow ourselves to modify the numbers given by Lazear& Gibbs. What if we isolate Svensen and instead of a production of £500.000 * 0,5 and -£100.000 * 0,5 had £1.000.000 * 0,5 and -£600.000 * 0,5? The expected output would be £200.000, which equals Gupta’s, BUT, as shown by neuroscience, people “typically exhibit greater sensitivity to losses than to equivalent gains when making decisions.” (Tom, Fox, Trepel & Poldrack, 2007)

According to their findings "... people typically reject gambles that offers a 50/50 chance of gaining or losing money, unless the amount that could be gained is at least twice the amount that could be lost.” (Ibid)

So in this case the decision maker would, by default, take the decision which is NOT in the best financial interest of the hiring company, which would forego an expected net of: £1.000.000 * 10 with probability of 0,5 plus -£600.000 * 1 with probability of 0,5 = £4.7 M and settle for Gupta’s expected profit of £1 M.
Conclusion Part 2.3
In this part I have showed that neuroscience provides us with the knowledge, that people need a compensation of twice the gain in comparison to the possible loss in order to agree to a gamble in which they can lose money. This might affect the decision making of the recruiter, in certain cases, and make him or her take decisions, which are not in the best financial interest of the hiring company.

Part 3.1: Making the recruitment process more objectively fair
In this part I will analyse some of the factors which neuroscience shows affect people’s decision making. This is due to the fact, that IBM puts a great deal of resources into being an employer of choice and to assure that no discrimination occurs in its recruitment process.

The normal recruitment process generally follows the same pattern. A position becomes vacant, the recruiter publishes the vacant position at a job base, some people apply, the recruiter makes a pre-selection from the applicants and invites the potential candidates to an interview. In this interview the interviewer asks the candidate about his/her past achievements and afterwards chooses the candidate which he/she finds will fulfill the job requirements best.

There is a general consensus amongst recruitment specialists, that this is a very, very bad way of trying to find the right people. (Brix, 2005)

Here I will look at a the application and interviewing part through the findings of Platt & Padoa-Schioppa to see how the recruitment process can be made more objectively fair, which is increasingly important for many companies, especially in the USA, as accusations of sexism and other kinds of discrimination can be extremely costly, both financially and in reputation.

\[\text{\footnotesize 22 Regarding the interview I refer to the competency-based interview which IBM uses, there are other kinds of interviews as well.}\]

\[\text{\footnotesize \ }\]
According to the findings of Platt & Padoa-Schioppa male monkeys forego larger rewards in order to view female sexual signals or faces of high-ranking males. (Glimcher et al., 2009: 450)

The findings of Hayden and colleagues showed, that humans will also pay more to view pictures of attractive members of the opposite sex, than to view pictures of unattractive ones, even when the reward cues are implicit. (Glimcher et al, 2009: 450).

These findings show that the recruitment process will be influenced for example if an attractive woman attaches a picture of herself to the application or CV, which in my experience is something people generally do. In this case her likelihood of being called to the interview is larger than if she had not attached the picture and the objective fairness of the recruitment process is distorted.

The situation becomes even more powerful should she show up for the actual job interview, being very attractive23, as, somehow, the recruiter cannot avoid her attractiveness, as it is possible to ask your secretary to cut out the pictures from the job applications and CV’s.

IBM is aware of the fact that the picture can influence the recruiters decision making, as it is not allowed to look at it (IBM internal training material), as it is not allowed to look at the gender, birth date etc. But this attempt of making the recruitment process more objective can clearly not have any effect in the actual job interview where people are forced to be together, and the recruiter is obliged – by IBM’s recruitment policy - to have his/her eyes open, in order to take notes.

23 I use the term “attractive as described in the New Oxford American Dictionary: "(of a person) appealing to look at; sexually alluring: an attractive, charismatic man."
The findings of Neuroscience further shows that "... men placed a value of around half a cent (US) on the opportunity to view an attractive woman, whereas the value women placed on the opportunity to view an attractive man was not different from zero." (Glimcher et al., 2009: 450)

I will not go further into what a value of “half a cent” means in the context of decision making, but emphasize that there is a difference between how men and women are influenced in their decision making.

These neuroscientific findings raises the question if a company, in order to have an objectively fair recruitment process, needs to forbid men from recruiting as they, scientifically speaking, are more affected from physical appearance, which is not important for the candidates ability to perform the job.

Conclusion Part 3.1
In this part, I have shown that the decision making of men is affected by the view of an attractive woman and have raised the question, if a company, in order to have an objectively fair recruitment process, need to forbid men to work as recruiters.

Part 3.2: Neuroscience and paternalism
Forbidding half the people on the planet (the men) to work within recruitment might not be the best solution to the problems which neuroscience states, potentially, exists within that process.

According to Camerer (2006) people go through a phase of “liking, wanting, learning”. First they are attracted to something(liking), then they do something to get it(wanting) and then they learn from their experience(learning).

In our recruitment situation this equals a recruiter being attracted by an attractive person(liking), hiring that attractive person(wanting) and then, hopefully, learning something from the situation.
The learning process can of course only happen if there is a feedback to the recruiter about his/her recruitment choice, which at least at IBM there isn’t (in my experience), and thus the learning process can be relative slow, which can be extremely expensive for the hiring company, as the costs of hiring the wrong person is estimated to be around 5 times that persons yearly salary (IBM recruitment material).

One of Camerer’s suggestions to the variations in wanting-liking gaps is a “Cooling Off” period (in his example regarding purchases). This suggestion could also be implemented in connection with the recruitment process, where a recruiter would be prohibited, for a certain period of time after reading the application, to choose to hire a candidate, so the recruiter could have time to think things through once more, and thus avoid letting an immediate attraction influence the recruitment process.

Another of Camerer’s suggestions is “Delegating choice – allowing an expert who can forecast liking to make or constrain a choice”. It could be a reasonable effective recruitment procedure if the recruiter would have to present the possible candidates to another expert, who would neither see the application of the candidates nor participate to their job interviews, who would then take the decision on whom to hire.

Conclusion Part 3.2
In this part I have shown that the theory of Paternalism can help the recruitment process overcome some of the challenges which neuroscience proves exists, for example through an obligatory “cooling off” period before the recruiter is allowed to choose whom to hire, or through “delegating the choice” so an unaffected third person expert takes the actual decision.
In this assignment I have shown that the recruitment process can be better aligned with the financial interest of the hiring company by understanding that the recruiter generally wants a potential gain which is twice as large as any potential loss in order to take a risky decision whereas in certain cases the recruiter will not by default take the decision which is in the best financial interest of the hiring company and the company should take actions to compensate for this. I have also shown that the recruitment process can be made more objectively fair by implementing the findings which neuroscience reveals, that men are placing a higher value on an attractive appearance and that this can be compensated through the theory of paternalism, for example an obligatory “cooling down” period or by delegating choice.

Perspective
My assignment is based on my experience with recruitment; especially my frustrations when I have witnessed my colleagues hire the “sure choice” candidate instead of the “risky option”. This assignment will not revolutionize the recruitment industry overnight, and is not meant to do so either. Instead it is one “brick” in the enormous “building” of recruitment and selection, however an influential brick whose findings should be implemented in order to make the recruitment and selection process more objectively fair.
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